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EXPERIMENTAL INVESTIGATION OF SHOCK-CELL NOISE REDUCTION FOR DUAL-STREAM NOZZLES IN SIMULATED FLIGHT

Contract NAS3-23166

Comprehensive Data Report

VOLUME II

LASER VELOCIMETER DATA, STATIC PRESSURES AND SHADOWGRAPH PHOTOS

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GENERAL ELECTRIC

For

National Aeronautics and Space Administration
Lewis Research Center
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16. Abstract

This Comprehensive Data Report, comprising two volumes, includes the description of test nozzles and a summary of test results which are analyzed and documented in a separate Final Report. Volume I contains a description of the scale model configurations and detailed test results from the hot, static and simulated-flight acoustic tests at the General Electric Anechoic Chamber. Volume II presents diagnostic laser velocimeter test data, the diagnostic shadowgraph photos and static pressure test results.

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5.0 LASER VELOCIMETER TESTS

Mean velocity (axial component) and turbulence velocity (axial component) measurements of twenty-five (25) selected flow conditions with six (6) models were performed employing the laser velocimeter. Aerodynamic conditions which define the test points are given in Subsection 5.1. Tabulations which explain the scope of mean velocity traverses and turbulence histogram measurements are also presented in Subsection 5.1. Subsection 5.2 contains tabulated data that describe the actual LV position, the type of traverses and measured mean and turbulent velocities along with copies of the LV mean velocity traces.

5.1 Test Matrix and Aerodynamic Conditions of Test Points

The aerodynamic test conditions of the twenty-five (25) test points are presented in Tables 5-1 through 5-6. The LV test points presented in these tables correspond to the acoustic test points presented in Tables 3.3 through 3.7 of Volume I.

The test points for each model include at least the C-D operating point under both static and simulated flight conditions. Approximately half of the LV tests reported herein were conducted at an elevated outer flow temperature of $T_T^o \sim 944^oK$ (1700^oR). The rest were conducted at a lower outer flow temperature of $T_T^o \sim 470^oK$ (850^oR). The inner flow temperature was consistently maintained at at $T_T^i \sim 470^oK$ (850^oR). Tables 5-7 through 5-34 summarize the scope of the LV tests which consist of at least one of the following:

1. Normal axial traverse: along and/or parallel to the nozzle centerline.

2. Normal radial traverse*: along the lines vertical to the nozzle centerline in E-W plane (i.e., plane defined by nozzle axis and microphone array).

*The normal radial traverses were performed only near the exit (on the plug surface) and indicated by the coordinate X'/h where X' is axial distance along the plug surface measured from the outer nozzle lip and h represents step-height of the outer nozzle (see Tables 5-7 through 5-34).

3. Slant axial traverse: along the lines parallel to the slant plug surface.

4. Point Histograms: Turbulent velocities were measured at the specified locations during the above mentioned axial, radial and slant traverses.

5.2 Laser Velocimeter Test Data

The measured data for LV test points given in Tables 5-1 through 5-6 are presented as follows:

- o Tabulated data in Tables 5-35 through 5-130. The tables summarize the type of traverse with its graph number, the histogram number and its location as defined by the position of the LV control volume, the measured mean and turbulent velocities.

- o Copies of the mean velocity traces obtained on the Hewlett-Packard X-Y Plotter. General remarks on the LV mean velocity traces are given in Subsection 5.2.2.

5.2.1 Tabulation of Laser Velocimeter Data

The parameters used in the tabulation of the LV data are defined below.

P_r:	Pressure ratio
T_T:	Total temperature, ^oR
V_j:	Fully expanded jet exit velocity, ft/s
$V_{a/c}$:	Free jet velocity, ft/s
D_{eq}	Defined as the equivalent diameter based on total flow area, inches
h:	Defined as the outer nozzle annulus height measured vertically to the plug surface between the outer wall of the inner nozzle and inner wall of the outer nozzle sleeve tip at the nozzle throat.

Type of Traverse:	Either a radial, an axial or a slant axial traverse.
Position:	Position of linear voltage displacement transducer (LVDT), volts.
Graph No:	Identification number of the mean velocity trace.
Histogram No.:	Identification number of the turbulence histogram
Ref.:	Reference point for mean velocity traverse, volts.
X,R,Z:	Coordinates which define the flow-field downstream of the plug (see figure presented in Table 5-7).
X',R',Z':	Coordinates which define the flow-field on the plug surface (see figure presented in Table I-7).

SUPERSCRIPT

i:	Inner nozzle
o:	Outer nozzle
mix:	mixed stream

5.2.2 General Remarks on LV Mean Velocity Traces

Copies of the LV mean velocity traces are presented in this section. The information provided on the traces obtained during the mean velocity traverses are explained on a set of sample traces provided in Figures 5-1 and 5-2. Additional general remarks on the mean velocity traces are given below:

- o Two kinds of mean velocity traces are available for most of the test points. They are pen-traverse and mini-histogram. During the present LV tests, the mean velocity data measured with the mini-histograms were obtained from the acceptable data samples set to 20. This number of samples yields an estimated 5% error in the mean velocity measurements with a statistical 95% confidence level for a given turbulence intensity of 10%.

- The "X-Axis" and "Y-Axis" scales are marked clearly on mini-histogram traces only. These scales are applicable to the corresponding pen traverse data as both the pen and mini-histogram traces for a given traverse were obtained at the same time. Also, all the traces have their scale factors marked in the plot-identification block. It is suggested that for analyses purposes the mini-histogram plots be used as they are more distinct.

- The axial mean velocity (V-component) presented in the traces is normalized either by the ideally expanded outer-stream exit velocity (V_j^o) or by the ideally expanded mixed stream velocity (V_j^{mix}) which is defined in Section 3.0 of Volume I.

- The traverse distance is normalized either by the outer annulus height (h) or by the equivalent diameter (D_{eq}).

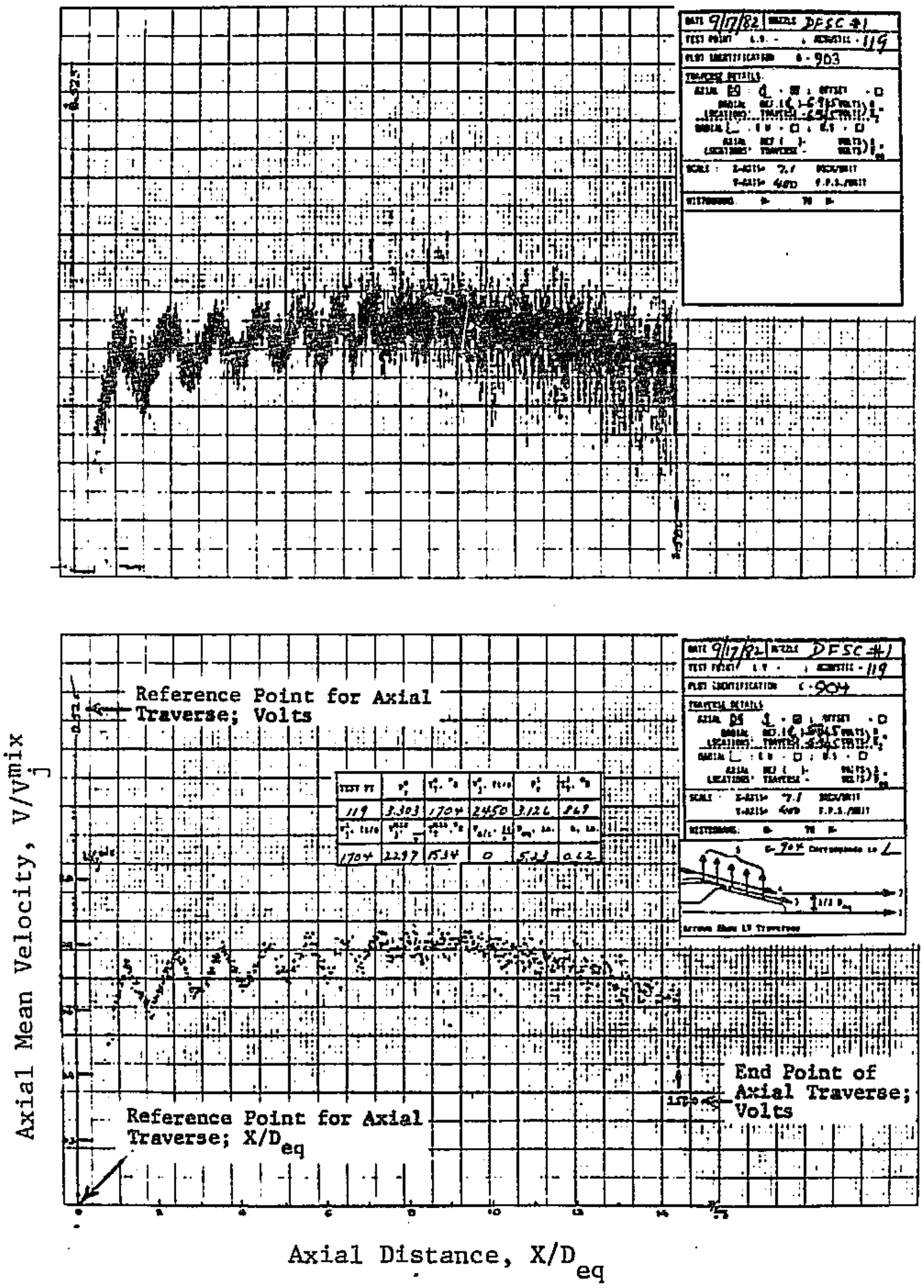

Figure 5-1. Sample Traces for Axial Mean Velocity Traverses.

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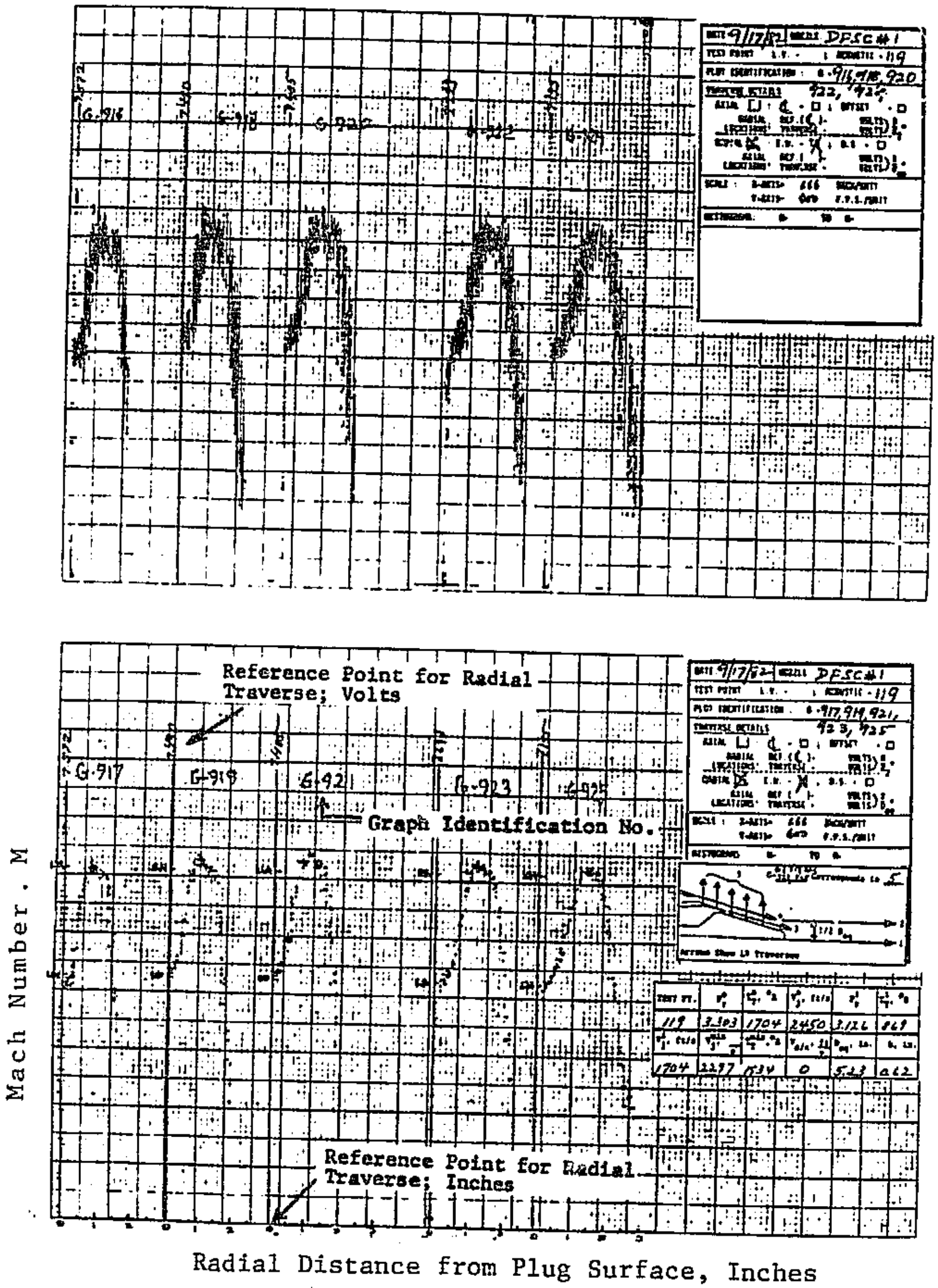

Figure 5-2. Sample Traces for Radial Mean Velocity Traverses.

TABLE 5-1. AERODYNAMIC CONDITIONS OF LV TEST POINTS OF DFSC-1.

Baseline Coannular Convergent Plug Nozzle (Truncated Plug).

Test Point	P_r^o	T_T^o (^oR)	V_j^o (ft/s)	P_r^i	T_T^i (^oR)	V_j^i (ft/s)	V_j^{mix} (ft/s)	T_T^{mix} (^oR)	$V_{a/c}$ (ft/s)	Remarks
119	3.303	1704	2450	3.126	869	1704	2297	1534	0	Correspond to C-D Design Point
120	3.321	1713	2461	3.123	875	1709	2308	1543	400	
1119	3.434	861	1754	3.144	855	1694	1744	860	0	
1120	3.402	884	1772	3.140	858	1696	1759	880	400	
101	-	-	-	3.140	859	1696	-	-	0	No Outer Stream

P_r = Pressure Ratio

T^T = Total Temperature

V_j = Fully Expanded Jet Exit Velocity

$V_{a/c}$ = Free Jet Velocity

<u>Superscripts</u>

o = Outer Stream

i = Inner Stream

mix = Mixed Stream

TABLE 5-2. AERODYNAMIC CONDITIONS OF LV TEST POINTS OF DFSC-2.

Outer/Inner C-D Coannular Plug Nozzle (Truncated Plug).

Test Point	P_r^o	T_T^o (^oR)	V_j^o (ft/s)	P_r^i	T_T^i (^oR)	V_j^i (ft/s)	V_j^{mix} (ft/s)	T_T^{mix} (^oR)	$V_{a/c}$ (ft/s)	Remarks
219	3.313	1681	2436	3.130	859	1695	2297	1494	0	
220	3.318	1700	2451	3.129	852	1688	2308	1506	400	
1219	3.403	846	1733	3.131	842	1678	1744	845	0	Correspond to C-D Design Point
1220	3.409	873	1762	3.130	840	1677	1759	867	400	
201	-	-	-	3.141	855	1693	-	-	0	No Outer Stream

P_r = Pressure Ratio

T^T = Total Temperature

V_j = Fully Expanded Jet Exit Velocity

$V_{a/c}$ = Free Jet Velocity

Superscripts

o = Outer Stream

i = Inner Stream

mix = Mixed Stream

TABLE 5-3. AERODYNAMIC CONDITIONS OF LV TEST POINTS OF DFSC-3.

Outer/Inner C-D Coannular Plug Nozzle (Extended Plug).

Test Point	P_r^o	T_T^o (^oR)	V_j^o (ft/s)	P_r^i	T_T^i (^oR)	V_j^i (ft/s)	V_j^{mix} (ft/s)	T_T^{mix} (^oR)	$V_{a/c}$ (ft/s)	Remarks
319	3.317	1702	2453	3.128	872	1707	2282	1513	0	
320	3.318	1704	2455	3.126	866	1701	2282	1513	400	
1319	3.389	870	1755	3.122	847	1681	1742	866	0	Correspond to C-D Desogn Point
1320	3.416	864	1754	3.126	856	1691	1743	863	400	
301	–	–	–	3.128	852	1689	–	–	0	No Outer Stream

P_r = Pressure Ratio

T^T = Total Temperature

V_j = Fully Expanded Jet Exit Velocity

$V_{a/c}$ = Free Jet Velocity

Superscripts

o = Outer Stream

i = Inner Stream

mix = Mixed Stream

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TABLE 5-4. AERODYNAMIC CONDITIONS OF LV TEST POINTS OF DFSC-4.

Multi-Element Outer Stream Suppressor Nozzle, Convergent Terminations on Outer/Inner Flowpaths.

Test Point	P_r^o	T_T^o (^oR)	V_j^o (ft/s)	P_r^i	T_T^i (^oR)	V_j^i (ft/s)	V_j^{mix} (ft/s)	T_T^{mix} (^oR)	$V_{a/c}$ (ft/s)	Remarks
415	3.136	1692	2396	2.918	863	1654	2243	1521	0	Correspond to C-D Design Point
416	3.118	1699	2396	2.922	873	1664	2244	1529	400	
1415	3.202	853	1703	2.910	855	1644	1694	853	0	
1416	3.216	878	1730	2.909	847	1636	1716	873	400	

P_r = Pressure Ratio

T^T = Total Temperature

V_j = Fully Expanded Jet Exit Velocity

$V_{a/c}$ = Free Jet Velocity

Superscripts

o = Outer Stream

i = Inner Stream

mix = Mixed Stream

TABLE 5-5. AERODYNAMIC CONDITIONS OF LV TEST POINTS OF DFSC-5.

Multi-Element Outer Stream Suppressor Nozzle with C-D Terminations on Outer/Inner Flowpaths.

Test Point	P_r^o	T_T^o (°R)	V_j^o (ft/s)	P_r^i	T_T^i (°R)	V_j^i (ft/s)	V_j^{mix} (ft/s)	T_T^{mix} (°R)	$V_{a/c}$ (ft/s)	Remarks
511	3.128	1709	2406	2.918	859	1649	2246	1530	0	
512	3.120	1651	2361	2.910	848	1637	2209	1483	400	Correspond to C-D Design Point
1511	3.212	855	1707	2.911	848	1638	1696	854	0	
1514	3.214	897	1749	2.919	865	1656	1734	892	400	

P_r = Pressure Ratio

T^T = Total Temperature

V_j = Fully Expanded Jet Exit Velocity

$V_{a/c}$ = Free Jet Velocity

Superscripts

o = Outer Stream

i = Inner Stream

mix = Mixed Stream

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TABLE 5-6. AERODYNAMIC CONDITIONS OF LV TEST POINTS OF DFSC-6.

Convergent Coannular Nozzle with a Sharp Tip Plug.

Test Point	P_r^o	T_T^o (°R)	V_j^o (ft/s)	P_r^i	T_T^i (°R)	V_j^i (ft/s)	V_j^{mix} (ft/s)	T_T^{mix} (°R)	$V_{a/c}$ (ft/s)	Remarks
619	3.302	1689	2439	3.119	871	1705	2289	1523	0	Correspond to C-D Design Point
620	3.317	1710	2459	3.145	868	1707	2304	1538	400	
649*	3.335	1687	2446	1.797	1348	1585	2356	1652	0	Outer Stream Supersonic Inner Stream Subsonic
1619	3.397	871	1757	3.122	864	1698	1748	870	0	Correspont to C-D Design Point
1620	3.412	875	1764	3.130	867	1703	1754	874	400	

P_r = Pressure Ratio

T^T = Total Temperature

V_j = Fully Expanded Jet Exit Velocity

$V_{a/c}$ = Free Jet Velocity

Superscripts

o = Outer Stream

i = Inner Stream

mix = Mixed Stream

* Matching Acoustic Test Point is Designated as 7619

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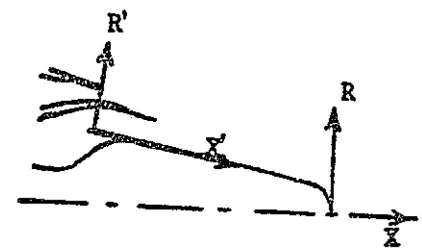
TABLE 5-7. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC-1; Baseline Coannular Convergent Nozzle (Truncated Plug).

TEST POINT 119

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	903-904		
		= 0.5	905-905A	18	2111-2128
	RADIAL	X'/h^o = 0.11 to 16.11	906 to 925		
Slant Traverse	AXIAL	R'/h^o = **	926-927		
		= *	930-931	16	2129-2144
		= ***	928-929		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



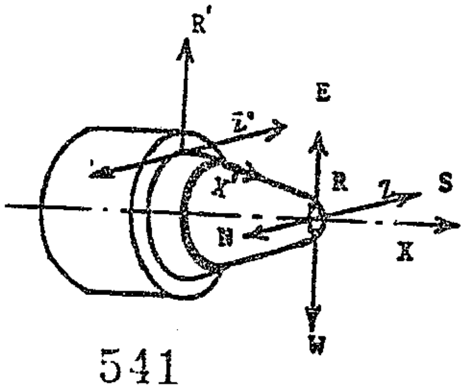


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TABLE 5-8. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC-1; Baseline Coannular Convergent Nozzle (Truncated Plug).

TEST POINT 120

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	875-876		
		= 0.5	877-878	16	2095-2110
	RADIAL	X'/h° = 0.11 to 16.11	879-898		
Slant Traverse	AXIAL	R'/h° = **	899-900		
		= *	932-933	16	2145-2160
		= ***	901-902		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline

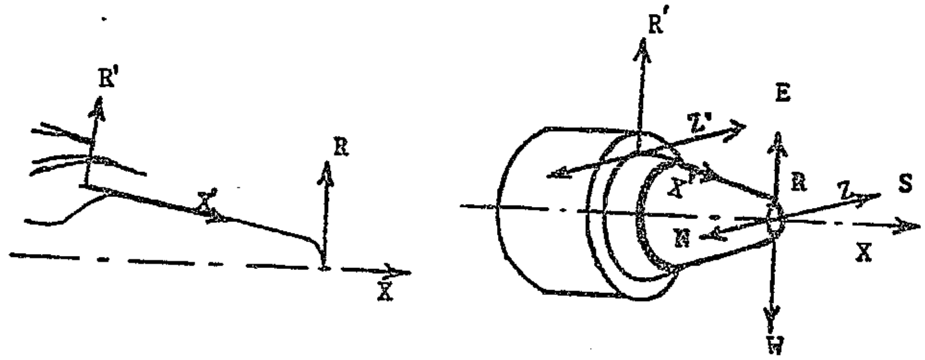


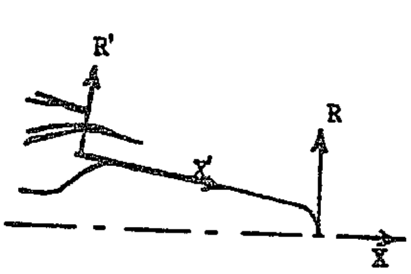
TABLE 5-9. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC-1; Baseline Coannular Convergent Nozzle (Truncated Plug).

TEST POINT 1119

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	801,825		
		= 0.5	803,826	24	2000-2023
	RADIAL	X'/h^o = 0.18 to 16.29	805-824		
Slant Traverse	AXIAL	R'/h^o = **	827		
		= ***	828		
		= *	829-830	22	2024-2045
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



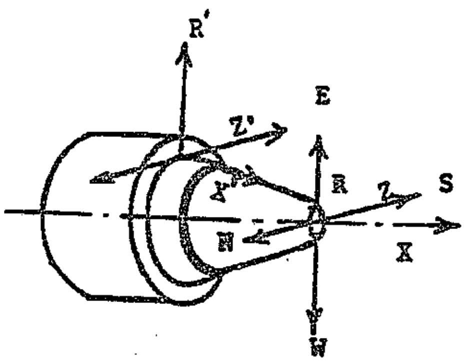


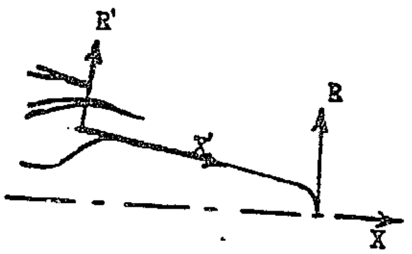
TABLE 5-10. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 1; Baseline Coannular Convergent Nozzle (Truncated Plug).

TEST POINT 1120

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	836-837		
		= 0.5	838-839	2	2046-2072
	RADIAL	X'/h^c = 0.18 to 10.92	840-853		
Slant Traverse	AXIAL	R'/h^o = **	854-855		
		= ***	867-868		
		= *	869-870	22	2073-2094
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



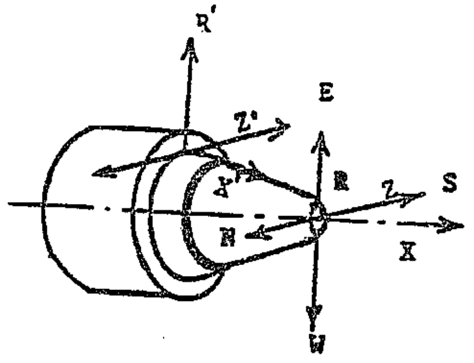


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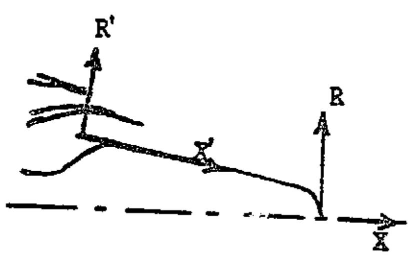
TABLE 5-11. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 1; Baseline Coannular Convergent Nozzle (Truncated Plug).

TEST POINT 101

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	834-835		
		=			
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h^{o} = ****	831-832		
		= **	833		
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



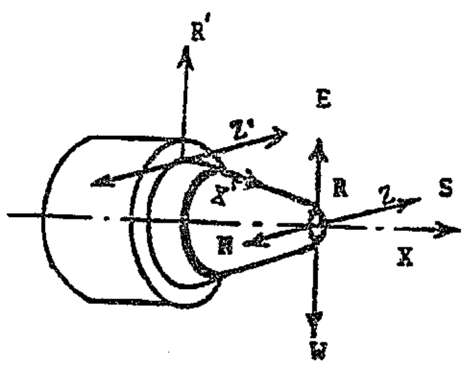


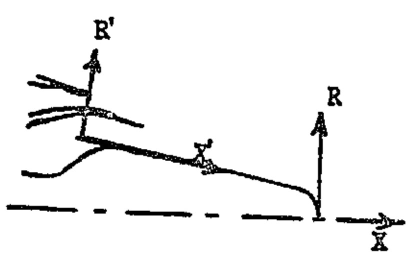
TABLE 5-12. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC-2; Coannular C-D Nozzle (Truncated Plug).

TEST POINT 219

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	975-976		
		= 0.5	977-978	16	2200-2215
	RADIAL	X'/h^o = 0.09 to 10.28	979-998		
Slant Traverse	AXIAL	R'/h^o = **	1059-1060		
		= *	1063-1064	11	2251-2261
		= ***	1061-1062		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



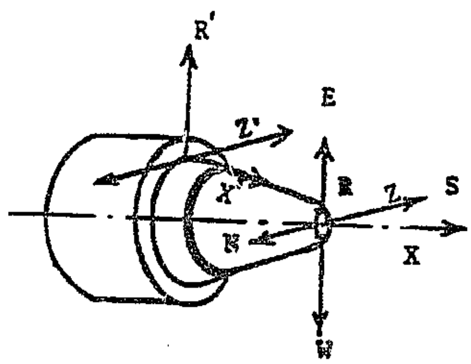


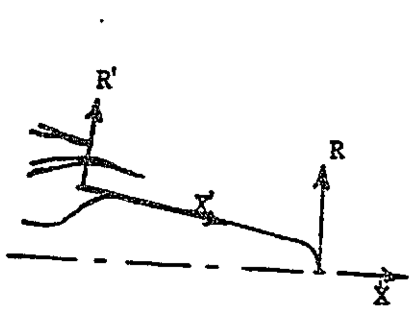
TABLE 5-13. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 2; Coannular C-D Nozzle (Truncated Plug).

TEST POINT 220

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	999-1000		
		= 0.5	1001-1002	15	2216-2230
	RADIAL	X'/h° = 0.09 to 10.28	1003-1022		
Slant Traverse	AXIAL	R'/h° = **	1065-1066		
		= *	1069-1070	11	2262-2272
		= ***	1067-1068		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



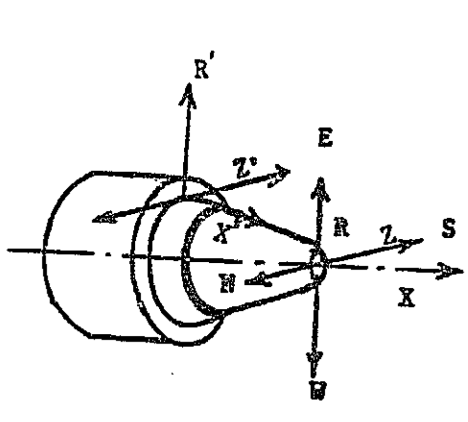


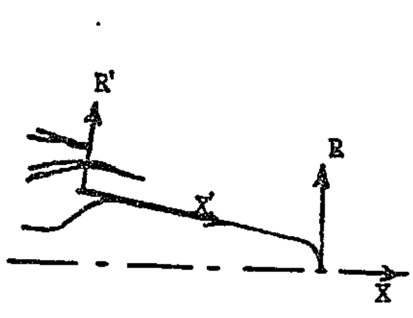
TABLE 5-14. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 2; Coannular C-D Nozzle (Truncated Plug).

TEST POINT 1219

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	936,938		
		= 0.5	939-940	22	2161-2182
	RADIAL	X'/h^{o} = 0.09 to 10.28	941-972		
Slant Traverse	AXIAL	R'/h^{o} = **	1053-1054		
		= *	1057-1058	19	2232-2250
		= ***	1055-1056		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



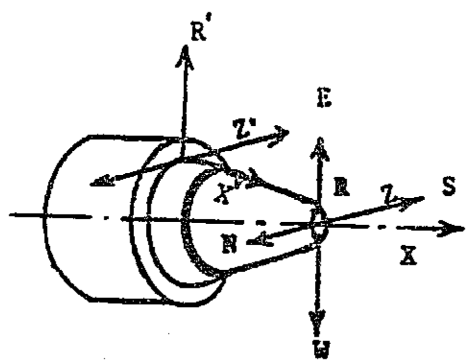


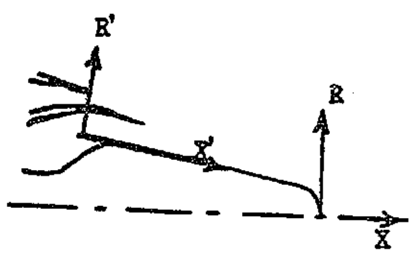
TABLE 5-15. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC-2; Coannular C-D Nozzle (Truncated Plug).

TEST POINT 1220

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1023-1024		
		= 0.5	1025-1026	16	2216- 2231
	RADIAL	X'/h^o = 0.09 to 10.28	1027-1046		
Slant Traverse	AXIAL	R'/h^o = **	1071-1072		
		= *	1075-1076	20	2273-2292
		= ***	1073-1074		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



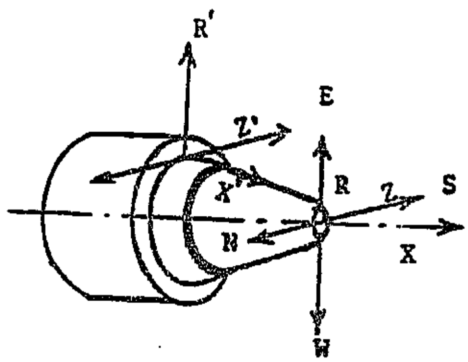


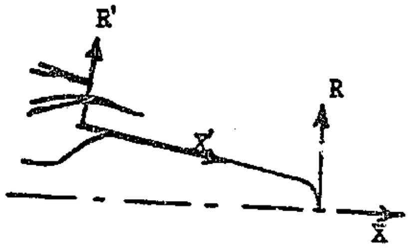
TABLE 5-16. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 2; Coannular C-D Nozzle (Truncated Plug).

TEST POINT 201

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} =			
		=			
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h^{o} = ****	1049-1050		
		=			
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



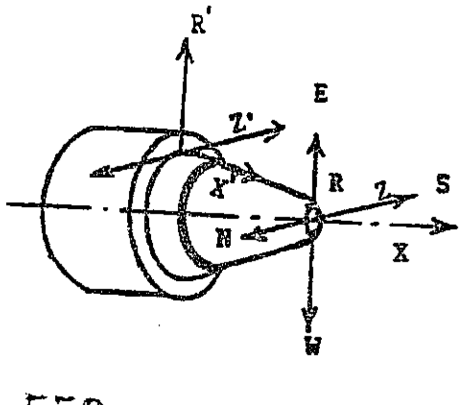


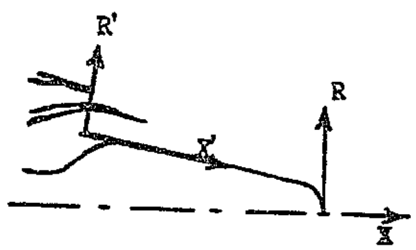
TABLE 5-17. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 3; Coannular C-D Nozzle (Extended Plug).

TEST POINT 319

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1091-1092		
		= 0.5	1093-1094		
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h^o = **	1095-1096		
		= *	1099-1100		
		= ***	1097-1098		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



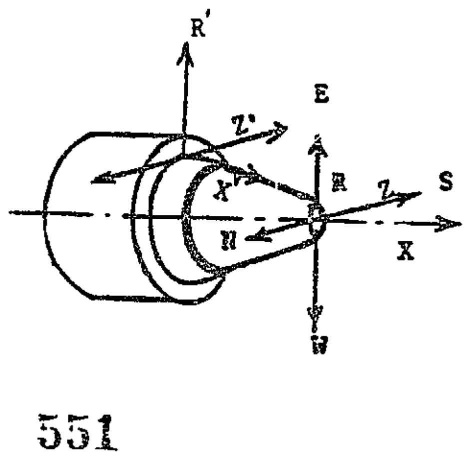


TABLE 5-18. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC-3; Coannular C-D Nozzle (Extended Plug)

TEST POINT 320

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1087-1088		
		= 0.5	1089-1090		
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h^{o} =			
		=			
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline

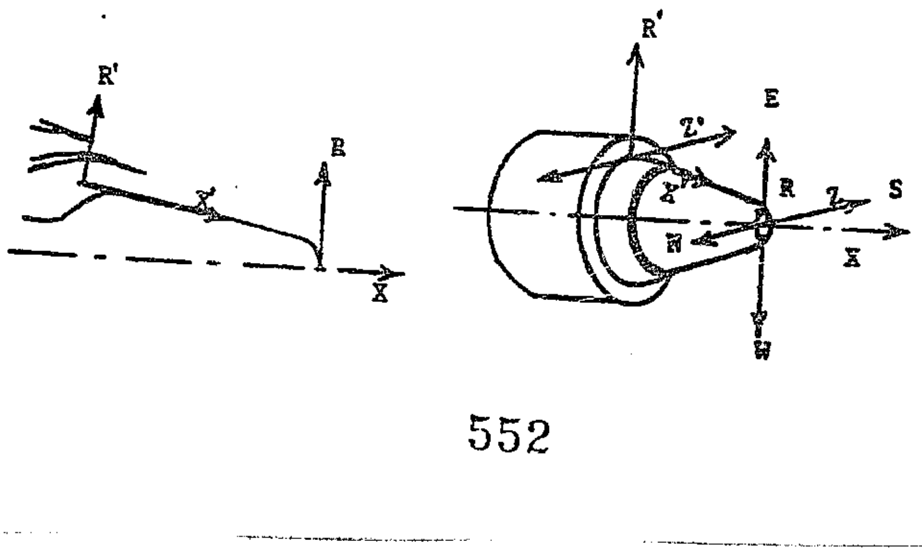


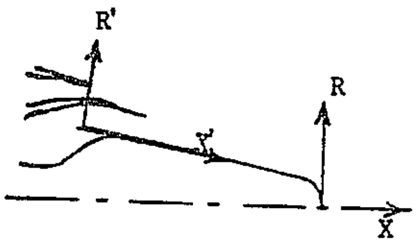
TABLE 5-19. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 3; Coannular C-D Nozzle (Extended Plug).

TEST POINT 1319

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1079-1080		
		= 0.5	1081-1082		
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h^o =			
		=			
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



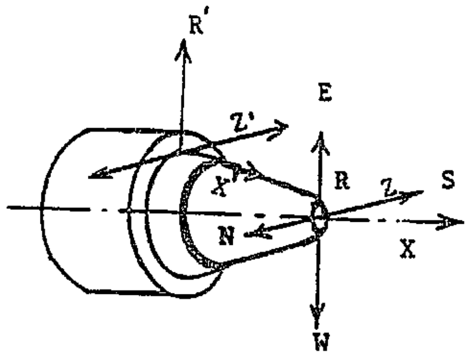


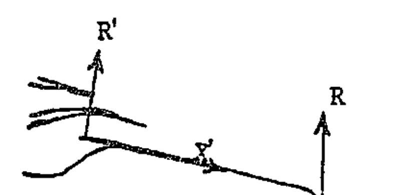
TABLE 5-20. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC-3; Coannular C-D Nozzle (Extended Plug).

TEST POINT 1320

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1083-1084		
		= 0.5	1085-1086		
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h^{o} =			
		=			
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



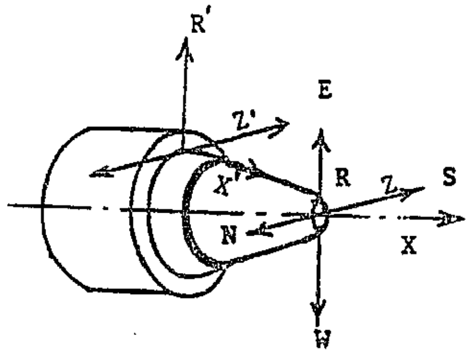


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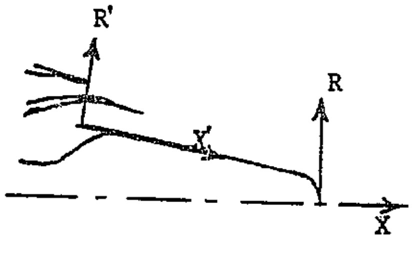
TABLE 5-21. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 3; Coannular C-D Nozzle (Extended Plug).

TEST POINT 301

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1077-1078		
		=			
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h° =			
		=			
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



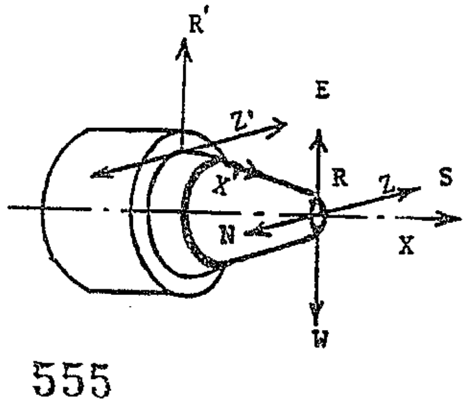


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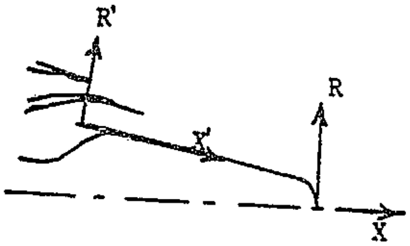
TABLE 5-22. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC-4; Coannular Suppressor Convergent Nozzle.

TEST POINT 415

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1129-1130		
		= 0.5	1131-1132	18	2317-2334
	RADIAL	X'/h° = 0.05 to 7.24	1133 to 1152		
Slant Traverse	AXIAL	R'/h° = **	1209-1210		
		= *	1153-1154	20	2335-2354
		= ***	1207-1208		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



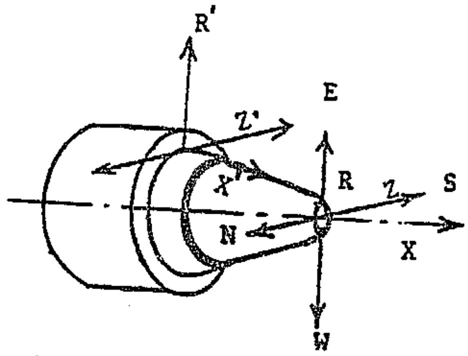


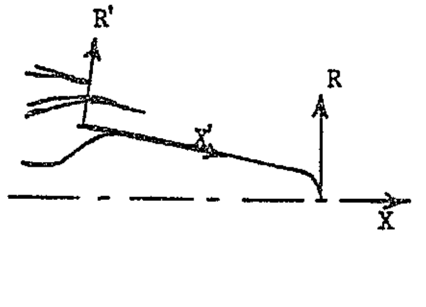
TABLE 5-23. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 4; Coannular Suppressor Convergent Nozzle.

TEST POINT 416

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1183-1184		
		= 0.5	1185-1186	17	2377-2393
	RADIAL	X'/h° = 0.05 to 7.24	1187 to 1206		
Slant Traverse	AXIAL	R'/h° = **	1227-1228		
		= *	1225-1226	18	2434-2451
		= ***	1223-1224		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



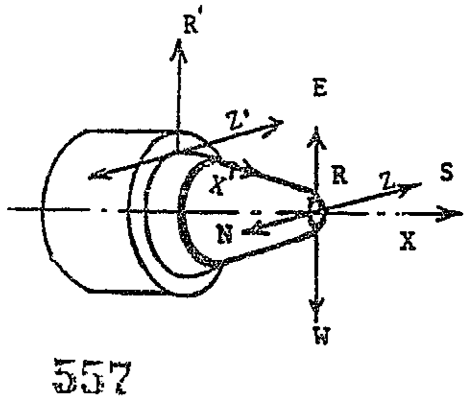


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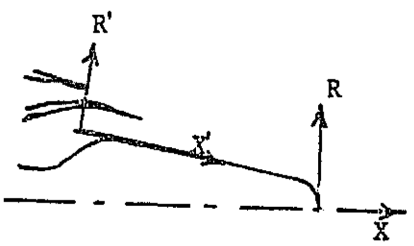
TABLE 5-24. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC-4; Coannular Suppressor Convergent Nozzle.

TEST POINT 1415

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1101-1102		
		= 0.5	1103-1104	21	2296-2316
	RADIAL	X'/h^o = 0.05 to 7.62	1105 to 1126		
Slant Traverse	AXIAL	R'/h^o = **	1215-1216		
		= *	1213-1214	20	2394-2413
		= ***	1211-1212		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



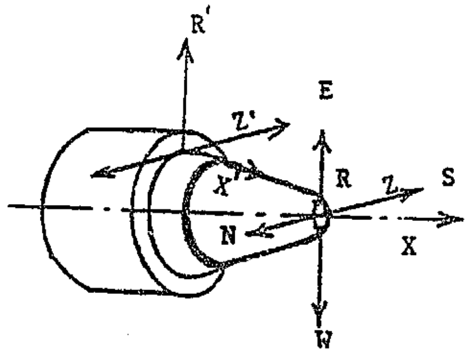


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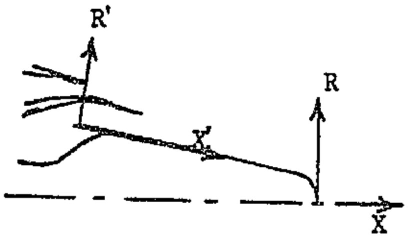
TABLE 5-25. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC-4; Coannular Suppressor Convergent Nozzle.

TEST POINT 1416

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1157-1158		
		= 0.5	1159-1160	21	2356-2376
	RADIAL	X'/h° = 0.05 to 7.24	1161 to 1180		
Slant Traverse	AXIAL	R'/h° = **	1221-1222		
		= *	1219-1220	20	2414-2433
		= ***	1217-1218		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



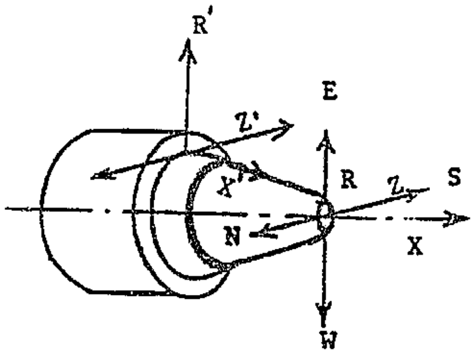


TABLE 5-26. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 5; Coannular Suppressor C-D Nozzle.

TEST POINT 511

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1239-1240		
		= 0.5	1241-1242	13	2474-2488
	RADIAL	X/D_{eq} = -1.65 to -0.06	1243-1260		
Slant Traverse	AXIAL	R'/h^{o} = ***	2567-2568		
		= *	2569-2570	18	2588-2605
		= **	2571-2572		
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline

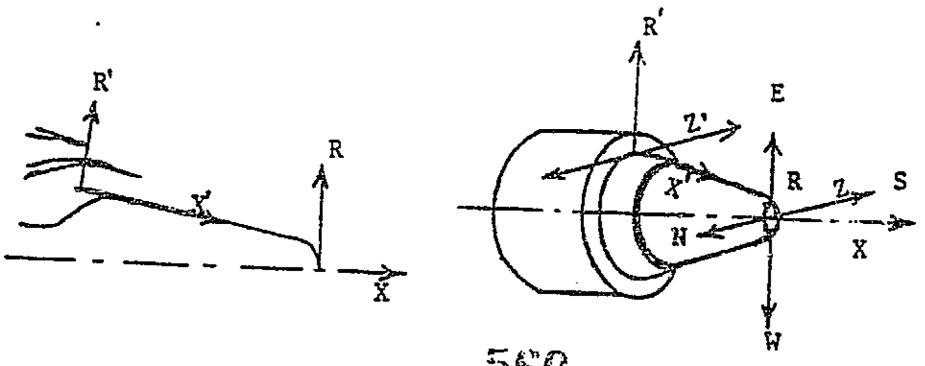


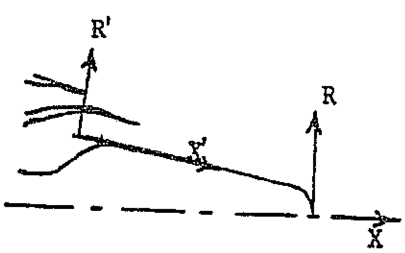
TABLE 5-27. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 5; Coannular Suppressor C-D Nozzle.

TEST POINT 512

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	2531-2532		
		= 0.5	2533-2534	15	2511-2525
	RADIAL	X'/h^o = 0.05 to 6.81	2535-2554		
Slant Traverse	AXIAL	R'/h^o = ***	2555-2556		
		= *	2557-2558	18	2526-2543
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



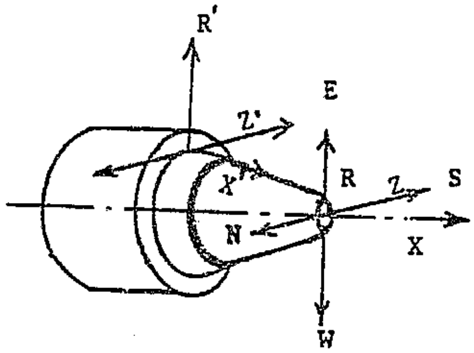


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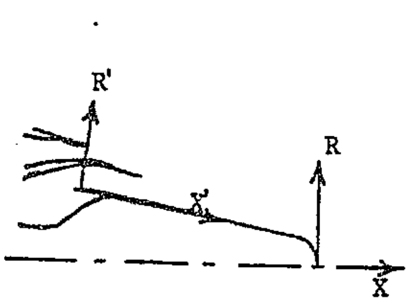
TABLE 5-28. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 5; Coannular Suppressor C-D Nozzle.

TEST POINT 1511

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1215-1216		
		= 0.5	1217-1218	21	2453-2473
	RADIAL	X'/h^o = 0.04 to 6.80	1219-1238		
Slant Traverse	AXIAL	R'/h^o = ***	2563-2564		
		= *	2565-2566	23	2565-2587
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



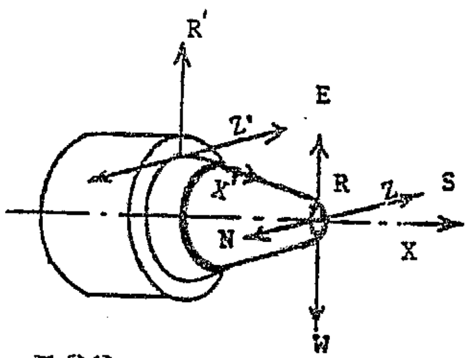


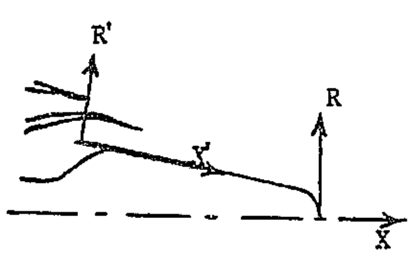
TABLE 5-29. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 5; Coannular Suppressor C-D Nozzle.

TEST POINT 1514

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	1261-1262		
		= 0.5	1263-1264	22	2489-2510
	RADIAL	X'/h^o = 0.05 to 6.81	2511 to 2530		
Slant Traverse	AXIAL	R'/h^o = ***	2559-2560		
		= *	2561-2562	21	2544-2564
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



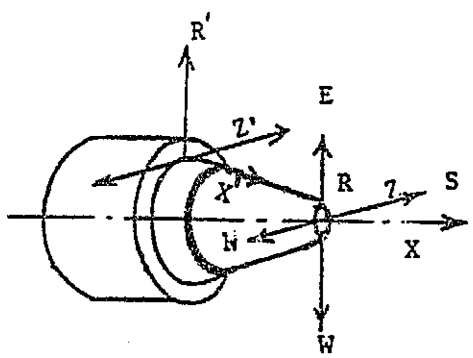


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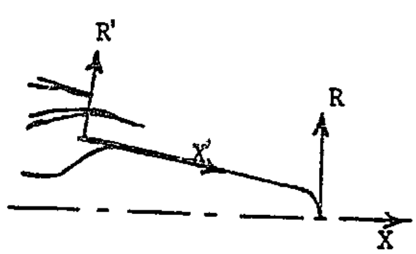
TABLE 5-30. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 6; Coannular Convergent Nozzle (Extended Plug).

TEST POINT 619

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	3016-3017		
		= 0.25	3018-3019		
		0.5	3020-3021	16	3001-3016
		↓			
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h° =			
		=			
		=			
		↓ =			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



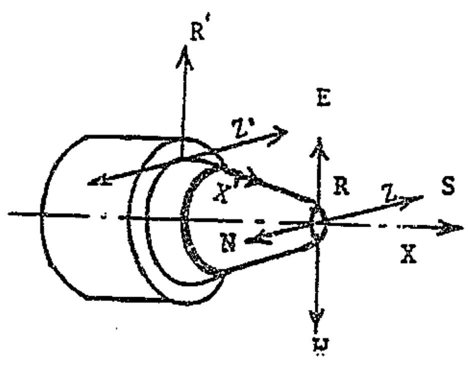


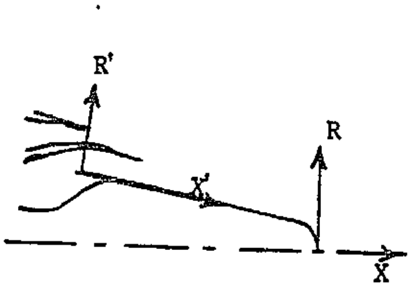
TABLE 5-31. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

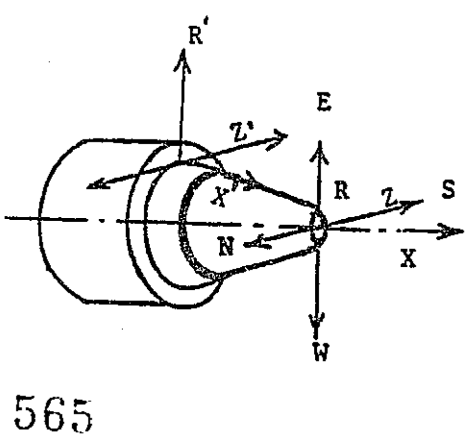
MODEL DFSC-6; Coannular Convergent Nozzle (Extended Plug).

TEST POINT 620

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.5	3010-3011		
		=			
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h^{o} = *	3012-3013		
		=			
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline





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OF POOR QUALITY

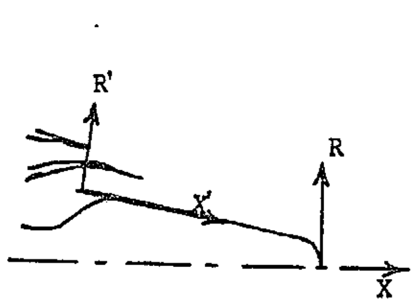
TABLE 5-32. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 6: Coannular Convergent Nozzle (Extended Plug).

TEST POINT 649

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	3022-3023		
		= 0.25	3024-3025		
		0.5	3026-3027	12	3017-3028
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h^{o} =			
		=			
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



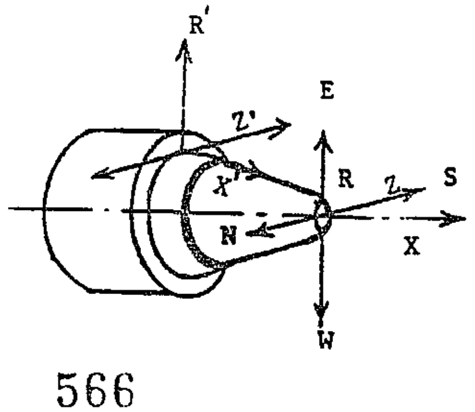


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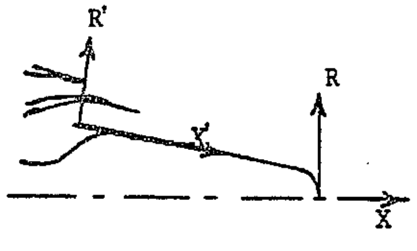
TABLE 5-33. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 6; Coannular Convergent Nozzle (Extended Plug).

TEST POINT 1619

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	3000-3001		
		= 0.5	3002-3003		
	RADIAL	X/D_{eq} = __ to __			
Slant Traverse	AXIAL	R'/h^o =			
		=			
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



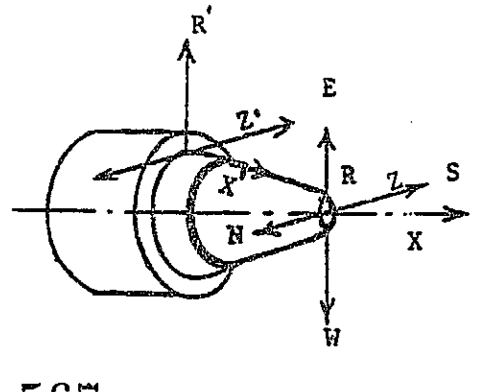


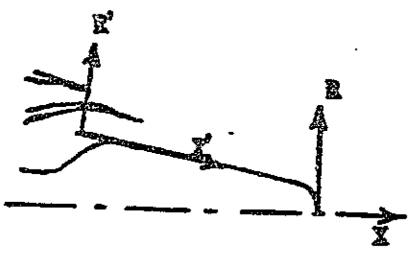
TABLE 5-34. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT TURBULENCE HISTOGRAM LOCATIONS

MODEL DFSC- 6; Coannular Convergent Nozzle (Extended Plug).

TEST POINT 1620

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
Normal Traverse	AXIAL	R/D_{eq} = 0.0	3004-3005		
		= 0.5	3006-3007		
	RADIAL	X/D_{eq} = ___ to ___			
Slant Traverse	AXIAL	R'/h° =			
		=			
		=			
		=			

* Along Outer Nozzle Lip-Line
** Along Inner Nozzle Lip-Line
*** Along Outer Stream Centerline



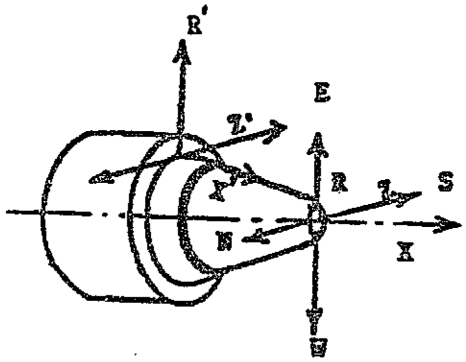


TABLE 5-35 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/17/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	119	3.303	1704	2450	3.126	869	1704	2297	1534	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	.	1.527	6.965	13.866	PLUG TIP					
903		AX		.			.	.	0.0	.	.	AX. TRAVRS. ON r/D_{eq}=0 AND 0.5, RESPECTIVELY.
904				.				.		.	.	
905				.	7.678			.	0.5	.	.	
905A				.				.		.	.	
	2111			1.525				0.0		2292	96	
	2112			1.565				0.51		2127	168	
	2113			1.605				1.06		2281	164	
	2114			1.645				1.60		2086	246	
	2115			1.685				2.14		2202	207	
	2116			1.725				2.68		2072	265	HISTO. MEASURED AXIALLY ON r/D_{eq} = 0.5.
	2117			–				–		–	–	
	2118			1.800				3.69		1994	265	
	2119			1.765				3.22		2053	230	
	2120			1.845				4.30		1942	241	
	2121			1.885				4.84		1861	270	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-36

AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER

TEST DATE 9/17/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	119	3.303	1704	2450	3.126	869	1704	2297	1534	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2122	AX		1.925	7.678	13.866		5.39	0.5	1878	239	
	2123	↓		1.965	↓	↓		5.93	↓	1727	257	
	2124			2.045				7.01		1698	280	
	2125			2.125				8.09		1584	295	HISTO. MEASURED AXIALLY
	2126			2.205				9.17		1484	288	ON r/D_{eq}=0.5.
	2127			2.285				10.26		1420	274	
	2128	↓		2.365	↓			11.34	↓	1360	284	
		REF	0.500	1.361			OUTER NOZZLE EXIT					
906		RADIAL	0.530				0.11					
907		↓	↓				↓					
908			1.000				1.79					
909			↓				↓					RADIAL TRAVRS. NEAR
910			1.500				3.58					NOZZLE EXIT
911			↓				↓					
912			2.000				5.37					
913		↓	↓			↓	↓					

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-37 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/17/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
1	119	3.303	1704	2450	3.126	869	1704	2297	1534	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
914		RADIAL	2.500	.	.	13.866	7.16		.	.	.	
915		↓	↓	.	.		↓		.	.	.	
916			3.000	.	.		8.95		.	.	.	
917			↓	.	.		↓		.	.	.	
918			3.500	.	.		10.74		.	.	.	
919			↓	.	.		↓		.	.	.	RADIAL TRAVRS. NEAR
920			4.000	.	.		12.53		.	.	.	NOZZLE EXIT
921			↓	.	.		↓		.	.	.	
922			4.500	.	.		14.32		.	.	.	
923			↓	.	.		↓		.	.	.	
924			5.000	.	.		16.11		.	.	.	
925		↓	↓	.	.	↓	↓		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-38 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/17/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	119	3.303	1704	2650	3.126	869	1704	2297	1534	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.500	1.503	6.245	13.866	PLUG TIP					
926		SLANT AX	.		5.624		.				.	
927			.		↓		.			.	.	SLANT AX. TRAVRS. ON INNER
930			.		5.558		.			.	.	NOZZLE LIP-LINE, AND
931			.				.			.	.	OUTER NOZZLE LIP-LINE,
	2129		0.75				0.90			2023	174	RESPECTIVELY.
	2130		1.00				1.79			2327	277	
	2131		1.25				2.69			2520	257	
	2132		1.50				3.58			2372	133	
	2133		1.75				4.48			2428	112	
	2134		2.00				5.37			2574	167	HISTO. MEASURED AXIALLY
	2135		2.25				6.27			2111	163	ON OUTER NOZZLE LIP-LINE
	2136		2.50				7.16			2242	58	
	2137		2.75				8.06			2294	57	
	2138		3.00				8.95			2241	61	
	2139	↓	3.25		↓	↓	9.84			2313	58	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-39 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/17/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	119	3.303	1704	2650	3.126	869	1704	2297	1534	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2140	SLANT AX	3.75		5.558	13.866	11.64			2356	47	
	2141	↓	4.25		↓	↓	13.43			2361	83	
	2142	↓	4.75		↓	↓	15.22			2261	129	HISTO. MEASURED AXIALLY
	2143	↓	5.00		↓	↓	16.11			2173	141	ON OUTER NOZZLE LIP-LINE
	2144	↓	5.25		↓	↓	17.01			2102	145	
928		SLANT AX	.		5.340	↓	.			.	.	SLANT AX. TRAVRS. ALONG
929		↓	.		↓	↓	.			.	.	CENTER OF OUTER STREAM.

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-40 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/16/82

MODEL	TEST PT.	P_r^o	T_T^c, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
1	120	3.321	1713	2461	3.123	875	1709	2308	1543	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.520	6.876	13.921	PLUG TIP					
875		AX		.				.	0.0	.	.	AX. TRAVRS. ON $r/D_{eq}=0$
876				.				.		.	.	AND 0.5.
877				.	7.648			.	0.5	.	.	
878				.				.		.	.	
	2095			1.520				0.0		2297	92	
	2096			1.560				0.54		2133	145	
	2097			1.600				1.08		2242	173	
	2098			1.640				1.62		2073	199	
	2099			1.680				2.17		2027	182	
	2100			1.720				2.71		1975	166	HISTO. MEASURED AXIALLY
	2101			1.760				3.25		1901	150	ON $r/D_{eq}=0.5$
	2102			1.800				3.79		1929	161	
	2103			1.840				4.33		1860	149	
	2104			1.880				4.87		1914	167	
	2105			1.960				5.95		1859	188	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-41 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/16/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	120	3.321	1713	2461	3.123	875	1709	2308	1543	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2106	AX		2.040	7.648	13.921		7.04	0.5	1721	224	
	2107			2.120				8.12		1694	251	
	2108			2.200				9.20		1635	252	HISTO. MEASURED AXIALLY
	2109			2.280				10.28		1550	257	ON R/D_{eq} = 0.5
	2110			2.360				11.37		-	-	
		REF	0.500	1.359			OUTER NOZZLE EXIT					
879		RADIAL	0.530				0.11		.	.	.	
880			↓		.		↓		.	.	.	
881			1.500		.		3.58		.	.	.	
882			↓		.		↓		.	.	.	
883			2.500		.		7.16		.	.	.	
884			↓		.		↓		.	.	.	RADIAL TRAVRS. NEAR
885			3.500		.		10.74		.	.	.	NOZZLE EXT
886			↓		.		↓		.	.	.	
887			4.500		.		14.32		.	.	.	
888			↓		.		↓		.	.	.	
889			5.000		.		16.11		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-42 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/16/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	120	3.321	1713	2461	3.123	875	1709	2308	1543	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
890		RADIAL	5.000		·	13.921	16.11		·	·	·	
891			4.000		·		12.53		·	·	·	
892			↓		·		↓		·	·	·	
893			3.000		·		8.95		·	·	·	
894			↓		·		↓		·	·	·	RADIAL TRAVRS. NEAR
895			2.000		·		5.37		·	·	·	NOZZLE EXIT
896			↓		·		↓		·	·	·	
897			1.000		·		1.79		·	·	·	
898		↓	↓		·		↓		·	·	·	
899		SLANT AX	·	·	5.082	·	·	·	·	·	·	SLANT AX. TRAVRS. ALONG
900		↓	·	·	↓	↓	·	·	·	·	·	OUTER NOZZLE LIP-LINE

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-43 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/17/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	120	3.321	1713	2461	3.123	875	1709	2308	1543	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.499	1.505	5.477	13.420	OUTER NOZZLE EXIT					
932		SLANT AX	.				.	.	.	.	.	SLANT AX. TRAVRS. ALONG
933			.				.	.	.	.	.	OUTER NOZZLE LIP-LINE
	2145		0.694				0.69	.	.	2066	79	
	2146		0.965				1.66	.	.	2238	195	
	2147		1.228				2.61	.	.	2539	160	
	2148		1.445				3.38	.	.	2462	98	
	2149		1.698				4.29	.	.	2377	62	
	2150		1.948				5.18	.	.	2506	78	
	2151		2.198				6.08	.	.	2237	266	HISTO. MEASURED AXIALLY
	2152		2.452				6.99	.	.	2097	233	ALONG OUTER NOZZLE
	2153		2.695				7.86	.	.	2146	195	LIP-LINE
	2154		2.948				8.76	.	.	2084	210	
	2155		3.448				10.55	.	.	2155	157	
	2156		3.198				9.66	.	.	2130	177	
	2157		3.698				11.45	.	.	2214	106	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-44 — AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER — TEST DATE 9/17/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	120	3.321	1713	2461	3.123	875	1709	2308	1543	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2158	SLANT AX	4.198	/	5.477	13.420	13.24	.	.	2267	93	
	2159		4.698	/			15.03	.	.	2243	83	HISTO. MEASURED AXIALLY
	2160		5.198	/			16.54	.	.	2197	79	ALONG OUTER NOZZLE LIP-LINE
901			-	.	5.488		.	.	.	.	.	SLANT AX. TRAVRS. ALONG
902			-	.			.	.	.	.	.	CENTERLINE OF OUTER STREAM

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-45 — AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER — TEST DATE 9/7/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	1119	3.434	861	1754	3.144	855	1694	1744	860	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.457	7.122	13.708	PLUG TOP					
801		AX	-	-			-	-	0.0	.	.	AX. TRAVRS ON JET AXIS
825				-			-	-	0.0	.	.	
803				.	7.911			.	0.5	.	.	AX. TRAVRS ON $r/D_{eq} = 0.5$
826				.				.	0.5	.	.	
		REF		1.346		←	PLUG TIP					
	2000			1.456				1.49		1644	82	
	2001			1.496				2.03		1521	134	
	2002			1.537				2.58		1615	111	
	2003			1.579				3.15		1472	181	
	2004			1.618				3.68		1566	153	HISTO. MEASURED AXIALLY
	2005			1.618				3.68		1575	135	ON $r/D_{eq} = 0.5$
	2006			1.658				4.22		1534	144	
	2007			1.696				4.74		1528	122	
	2008			1.738				5.30		1502	138	
	2009			1.777				5.83		1461	142	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-46 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/7/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	1119	3.434	861	1754	3.144	855	1694	1744	860	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2010	AX		1.818	7.911	13.708		6.39	0.5	1455	143	
	2011			1.857				6.91		1429	133	
	2012			1.895				7.43		1391	147	
	2013			1.938				8.01		1399	158	
	2014			1.981				8.59		1337	158	
	2015			2.022				9.15		1317	198	HISTO. MEASURED AXIALLY
	2016			2.022				9.15		1321	166	ON r/D_{eq} = 0.5.
	2017			2.055				9.59		1307	178	
	2018			2.098				10.18		1262	197	
	2019			2.138				10.72		1236	204	
	2020			2.175				11.22		1228	209	
	2021			2.218				11.80		1191	214	
	2022			2.261				12.38		1176	220	
	2023			2.500				15.62		1025	211	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-47 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/7/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h°, in.
1	1119	3.434	861	1754	3.144	855	1694	1744	860	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.950	-	-	13.708	OUTER NOZZLE EXIT					
805		RADIAL	1.000		-		0.18		-	.	.	
806			1.000		-		↓		-	.	.	
807			1.500		-		1.97		-	.	.	
808			1.500		-		↓		-	.	.	
809			2.000		-		3.76		-	.	.	
810			2.000		-		↓		-	.	.	
811			2.500		-		5.55		-	.	.	
812			2.500		-		↓		-	.	.	RADIAL TRAVERS. NEAR
813			3.000		-		7.34		-	.	.	EXIT
814			3.000		-		↓		-	.	.	
815			3.500		-		9.13		-	.	.	
816			3.500		-		↓		-	.	.	
817			4.000		-		10.92		-	.	.	
818			4.000		-		↓		-	.	.	
819		↓	4.500		-	↓	12.71		-		.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-48 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/7/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	1119	3.434	861	1754	3.144	855	1694	1744	860	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
820		RADIAL	4.500		·	13.708	12.71		·	·	·	RADIAL TRAVRS. NEAR EXIT
821		↓	5.000		·	↓	14.50		·	·	·	
822			5.000		·		↓		·	·	·	
823			5.500		·		16.29		·	·	·	
824		↓	5.500		·	↓	↓		·	·	·	
							·		·	·	·	
827		SLANT AX	·	·	5.467	13.708	·		·	·	·	SLANT AX. TRAVRS. ALONG INNER NOZZLE LIP-LINE AND CENTERLINE OF OUTER STREAM, RESPECTIVELY
828		↓	·	·	5.851	↓	·		·	·	·	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-49 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/8/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	1119	3.434	861	1754	3.144	855	1694	1744	860	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	1.000	1.277	5.851	13.254	OUTER NOZZLE EXIT			.	.	
829		SLANT AX	.				.			.	.	SLANT AX. TRAVERS. ALONG
830			.				.			.	.	OUTER NOZZLE LIP-LINE
	2024		6.000				19.9			1542	60	
	2025		5.500				16.1			1541	82	
	2026		5.000				↓			1624	63	
	2027		4.500				12.5			1678	52	
	2028		4.000				10.7			1692	49	
	2029		3.500				8.95			1650	33	HISTO. MEASURED AXIALLY
	2030		3.000				7.16			1585	52	ALONG OUTER NOZZLE
	2031		1.250				0.90			1493	78	LIP-LINE.
	2032		1.500				1.79			1729	144	
	2033		1.750				2.69			1929	91	
	2034		2.000				3.58			1750	166	
	2035		2.125				4.03			1558	97	
	2036		2.250				4.48			1658	66	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-50 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/8/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	1119	3.434	861	1754	3.144	855	1694	1744	860	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2037	SLANT AX	2.500		5.851	13.254	5.37			1814	98	
	2038		2.750				6.27			1536	224	
	2039		2.750				↓			1540	156	
	2040		3.250				8.06			1620	183	HISTO. MEASURED AXIALLY
	2041		3.750				9.84			1671	42	ALONG OUTER NOZZLE
	2042		4.250				11.6			1672	42	LIP-LINE.
	2043		4.750				13.4			1649	58	
	2044		5.250				15.2			1558	89	
	2045		5.750				17.0			1516	70	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-51 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/10/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	1120	3.402	884	1772	3.140	858	1696	1759	860	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.479	7.053	13.670	PLUG TIP					
836		AX		·				·	0.0	·	·	AX. TRAVRS. ON R/D_{eq}=0 AND 0.5
837				·				·		·	·	
838				·	7.870			·	0.5	·	·	
839				·				·		·	·	
	2046			1.483				0.05		1655	60	
	2047			1.522				0.58		1548	142	
	2048			1.522				0.58		1549	108	
	2049			1.522				0.58		1552	102	
	2050			1.564				1.15		1656	91	
	2051			1.599				1.62		1536	149	HISTO. MEASURED AXIALLY ON R/D_{eq}=0.5
	2052			1.642				2.21		1609	105	
	2053			1.684				2.77		1574	121	
	2054			1.720				3.26		1518	105	
	2055			1.764				3.86		1552	116	
	2056			1.799				4.33		1444	108	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-52 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/10/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h°, in.
1	1120	3.402	884	1772	3.140	858	1696	1759	880	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2057	AX		1.842	7.870	13.670		4.91	0.5	1502	120	
	2058			1.885				5.49		1396	124	
	2059			1.922				5.99		1476	133	
	2060			1.959				6.49		1374	139	
	2061			2.002				7.08		1411	148	
	2062			2.042				7.62		1356	148	
	2063			2.082				8.16		1343	164	HISTO. MEASURED AXIALLY
	2064			2.124				8.73		1324	160	ON $R/D_{eq} = 0.5$.
	2065			2.162				9.24		1290	177	
	2066			2.204				9.81		1227	200	
	2067			↓				9.81		1245	212	
	2068			2.204				9.81		1265	182	
	2069			2.243				10.34		1252	189	
	2070			↓				10.34		1254	197	
	2071			2.281				10.85		1228	192	
	2072			2.499				13.80		1108	196	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-53 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/10/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	1120	3.402	884	1772	3.140	858	1696	1759	880	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.950	-	-	13.73	OUTER NOZZLE EXIT					
840		RADIAL	1.000		.		0.18		.	.	.	
841			1.000		.		↓		.	.	.	
842			1.500		.		1.97		.	.	.	
843			1.500		.		↓		.	.	.	
844			2.000		.		3.76		.	.	.	
845			2.000		.		↓		.	.	.	
846			2.500		.		5.55		.	.	.	RADIAL TRAVS. NEAR
847			2.500		.		↓		.	.	.	NOZZLE EXIT
848			3.000		.		7.34		.	.	.	
849			3.000		.		↓		.	.	.	
850			3.500		.		9.13		.	.	.	
851			3.500		.		↓		.	.	.	
852			4000		.		10.92		.	.	.	
853		↓	4000		.		↓		.	.	.	
						↓						

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-54 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/10/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h°, in.
1	1120	3.602	884	1772	3.140	858	1696	1759	880	400	5.23	0.62

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Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF			8.038	13.803	PLUG TIP					
854		SLANT AX	.	.	8.958	↓	.	.	.	.	.	SLANT AX. TRAVS. ALONG
855		↑	.	.	↓	↓	.	.				INNER NOZZLE LIP-LINE
856												
857			REPEATED ON G-867 ~ 870									
858				.								
859		↓		.								
867		↓	.	.	5.283	13.803	.	.	.	.	.	SLANT AX. TRAVS. ALONG
868		↓	.	.	↓	↓		.	.	.	.	CENTERLINE OF OUTER STREAM

NOMENCLATURE

P_r = Pressure Ratio
V_j = Fully Expanded Jet Velocity
D_{eq} = Equivalent Diameter
T_T = Total Temperature
$V_{a/c}$ = Free Jet Velocity
h = Annulus Height

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TABLE 5-55 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/16/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	1120	3.402	884	1772	3.140	858	1696	1759	880	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.503	1.304	5.398	13.473	OUTER NOZZLE EXIT					
869		SLANT AX	.		5.398		.	.	.	.	.	SLANT AX. TRAVRS. ALONG
870			.				.	.	.	.	.	OUTER NOZZLE LIP-LINE
	2073		0.750				0.88			1555	59	
	2074		1.000				1.78			1834	81	
	2075		1.250				2.67			1986	93	
	2076		1.500				3.56			1777	94	
	2077		1.750				4.46			1649	45	
	2078		2.000				5.36			1873	77	HISTO. MEASURED AXIALLY ON
	2079		2.189				6.04			1883	72	OUTER NOZZLE LIP-LINE
	2080		2.281				6.36			1400	150	
	2081		2.500				7.15			1538	60	
	2082		2.750				8.04			1653	43	
	2083		3.000				8.94			1641	31	
	2084		3.250				9.83			1667	32	
	2085		3.500				10.73			1676	33	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-56 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/16/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	1120	3.402	884	1772	3.140	858	1696	1759	880	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2086	SLANT AX	3.750		5.398	13.473	11.62			1675	35	
	2087		4.000				12.52			1685	39	
	2088		4.250				13.41			1656	53	
	2089		4.500				14.30			1621	62	
	2090		4.750				15.20			1587	76	HISTO. MEASURED AXIALLY
	2091		5.000				16.10			1551	84	ON OUTER NOZZLE LIP-LINE
	2092		5.250				16.99			1558	78	
	2093		5.500				17.89			1560	81	
	2094		5.750				18.78			1538	75	

NOMENCLATURE

P_r = Pressure Ratio　V_j = Fully Expanded Jet Velocity　D_{eq} = Equivalent Diameter

T_T = Total Temperature　$V_{a/c}$ = Free Jet Velocity　h = Annulus Height

TABLE 5-57 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/8/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
1	101	-	-	-	3.160	859	1696	-	-	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
831		SLANT AX	.	.	5.261	13.254	.	.	.	.	.	SLANT AX. TRAVRS. ALONG
832		↓	.	.	↓	↓	.	.	.	.	.	CENTERLINE OF INNERSTREAM
833		↓	.	.	5.420		.	.	.	.	.	SLANT AX. TRAVRS. ALONG INNER
834		AX	.	.	7.040		.	.	0.0	.	.	LIP-LINE
835		↓	.	.	↓	↓	.	.	↓	.	.	AX. TRAVRS. ON $r/D_{eq}=0$

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-58 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	219	3.313	1681	2436	3.130	859	1695	2287	1494	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF →	-	1.522	6.875	13.905	PLUG TIP					
975		AX		-	6.875			·	0.0	·	·	
976		↓		-	↓			·	↓	·	·	AX. TRAVRS. ON r/D_{eq}=0 AND
977				-	7.675			·	0.5	·	·	0.5, RESPECTIVELY.
978				·				·		·	·	
	2200			1.518				0.00		2287	165	
	2201			1.560				0.51		1851	281	
	2202			1.601				1.06		2047	268	
	2203			1.639				1.57		1961	318	
	2204			1.682				2.14		1941	313	TURB. HISTO. MEASURED
	2205			1.722				2.68		1975	332	AXIALLY ON r/D_{eq}=0.5.
	2206			1.760				3.18		1909	336	
	2207			1.804				3.77		1958	333	
	2208			1.840				4.25		1909	332	
	2209			1.879				4.78		1919	326	
	2210	↓		1.964	↓	↓		5.91	↓	1836	287	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-59 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	219	3.313	1681	2436	3.130	859	1695	2297	1494	0	5.29	0.77

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Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2211	AX		2042	7.695	13.905		6.96	0.5	1671	323	
	2212	↓		2.121	↓	↓		8.01	↓	1505	295	TURB. HISTO. MEASURED
	2213	↓		2.201	↓	↓		9.08	↓	1424	309	AXIALLY ON r/Deq = 0.5.
	2214	↓		2.283	↓	↓		-	↓	-	-	
	2215	↓		2.283	↓	↓		10.18	↓	1372	303	
		REF	0.500	1.605	-	↓	OUTER NOZZLE EXIT		.	.	.	
979		RADIAL	0.530		.	↓	0.09		.	.	.	
980		↓	↓		.	↓	↓		.	.	.	
981		↓	0.896		.	↓	1.14		.	.	.	
982		↓	↓		.	↓	↓		.	.	.	RADIAL TRAVRS. NEAR
983		↓	1.292		.	↓	2.28		.	.	.	NOZZLE EXIT
984		↓	↓		.	↓	↓		.	-	.	
985		↓	1.688		.	↓	3.43		.	.	.	
986		↓	↓		.	↓	↓		.	.	.	
987		↓	2.084		.	↓	4.57		.	.	.	
988		↓	↓		.	↓	↓		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-60 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	219	3.313	1681	2436	3.130	859	1695	2297	1494	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
989		RADIAL	2.480		.	13.905	5.71		.	.	.	
990			↓		.		↓		.	.	.	
991			2.876		.		6.85		.	.	.	
992			↓		.		↓		.	.	.	
993			3.272		.		7.992		.	.	.	RADIAL TRAVRS NEAR
994			↓		.		↓		.	.	.	NOZZLE EXIT
995			3.668		.		9.134		.	.	.	
996			↓		.		↓		.	.	.	
997			4.064		.		10.28		.	.	.	
998		↓	↓		.		↓		.	.	.	
		REF	0.700		5.48		OUTER NOZZLE EXIT			.	.	
1059		SLANT AX	.				.	.	.	.	.	
1060			.				.	.	.	.	.	
1063			.				.	.	.	.	.	SLANT AX. TRAVRS ALONG
1064			.				.	.	.	.	.	INNER AND OUTER NOZZLE
	2251	↓	4.300		↓	↓	10.38	.	.	2342	61	LIP-LINES, RESPECTIVELY.

NOMENCLATURE

P_r = Pressure Ratio
V_j = Fully Expanded Jet Velocity
D_{eq} = Equivalent Diameter
T_T = Total Temperature
$V_{a/c}$ = Free Jet Velocity
h = Annulus Height

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TABLE 5-61 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	$\mathring{h}$, in.
2	219	3.313	1681	2436	3.130	859	1695	2297	1494	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h'	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2252	SLANT AX	4.100		5.418	13.905	9.80			2377	55	
	2253		3.696				8.64			2410	65	
	2254		3.288				7.46			2394	72	
	2255		2.891				6.32			2376	74	
	2256		2.496				5.18			2360	73	TURB. HISTO. MEASURED SLANT
	2257		2.099				4.03			2352	89	AXIALLY ON OUTER NOZZLE
	2258		1.704				2.89			2370	95	LIP-LINE.
	2259		1.301				1.73			2340	101	
	2260		0.901				0.58			2283	112	
	2261	↓	1.103		↓	↓	1.16			2330	112	
1061		SLANT AX	-		5.294	13.905						SLANT AX. TRAVRS. ALONG
1062		↓			↓	↓						CENTERLINE OF OUTER STREAM

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-62 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h°, in.
2	220	3.318	1700	2451	3.129	852	1688	2308	1506	460	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF		1.522	6.846	13.839	PLUG TIP			.	.	
999	.	AX		.	6.846			.	0.0	.	.	
1000				.	↓			.	↓	.	.	AX. TRAVRS. ON r/D_{eq}=0 AND
1001				.	7.646			.	0.5	.	.	0.5, RESPECTIVELY.
1002				.				.		.	.	
	2216			1.522				0.00		1651	83	
	2217			1.564				0.56		1482	160	
	2218			1.608				1.15		1533	147	
	2219			1.646				1.66		1486	174	
	2220			1.690				2.25		1490	173	
	2221			1.724				2.68		1498	180	TURB. HISTO. MEASURED
	2222			1.763				3.22		1462	180	AXIALLY ON r/D_{eq}=0.5.
	2223			1.807				3.81		1498	178	
	2224			1.844				4.31		1473	180	
	2225			1.886				4.87		1471	181	
	2226			1.966				5.94		1418	180	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-63 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h°, in.
2	220	3.318	1700	2451	3.129	852	1688	2308	1506	400	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2227	AX		2.042	7.646	13.839		6.96	0.5	1353	200	
	2228	↓		2.127	↓	↓		8.09	↓	1273	223	TURB. HISTO. MEASURED
	2229			2.206				9.15		1197	219	AXIALLY ON R/D_{eq}=0.5.
	2230	↓		2.286	↓	↓		10.22	↓	1196	226	
		REF	0.500	1.401	–	13.839	OUTER NOZZLE LIP			.	.	
1003		RADIAL	0.530		.		0.09		-	.	.	
1004			↓		.		↓		.	.	.	
1005			0.896		.		1.14		-	.	.	
1006			↓		.		↓		.	.	.	
1007			1.292				2.28		-	.	.	RADIAL TRAVRS. NEAR EXIT
1008			↓		.		↓		.	.	.	
1009			1.886		.		4.00		-	.	.	
1010			↓		.		↓		.	.	.	
1011			2.084		.		4.57		-	.	.	
1012			↓		.		↓		-	.	.	
1013		↓	2.480		.	↓	5.71				.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-64 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/28/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	220	3.318	1700	2451	3.129	852	1688	2308	1506	400	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
1014		RADIAL	2.480		.	13.839	5.71		.	.	.	
1015		↓	2.876		.	↓	6.85		.	.	.	
1016			↓		.		↓		.	.	.	
1017			3.274		.		8.00		.	.	.	
1018			↓		.		↓		.	.	.	RADIAL TRAVRS. NEAR EXIT
1019			3.866		.		9.70		.	.	.	
1020			↓		.		↓		.	.	.	
1021			4.064		.		10.28		.	.	.	
1022		↓	↓		.	↓	↓		.	.	.	
1065		SLANT AX	.		5.029	13.839			.	.	.	
1066		↓	.		↓	↓			.	.	.	SLANT AX. TRAVRS. ON INNER
1069			.		5.424				.	.	.	AND OUTER LIP-LINES, RESPECTIVELY
1070			.		↓				.	.	.	
	2262		0.987				1.40		.	2054	218	
	2263		1.300				2.31		.	2220	175	HISTO. MEASURED SLANT
	2264	↓	1.700		↓	↓	3.46		.	2351	110	AXIALLY ON OUTER NOZZLE LIP-LINE.

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-65 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	220	3.318	1700	2451	3.129	852	1688	2308	1506	400	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2265	SLANT AX	2.100		5.310	13.839	4.61		.	2346	97	
	2266		2.501				5.77		.	2377	71	
	2267		2.910				6.95		.	2404	55	
	2268		3.300				8.07		.	2415	56	
	2269		3.700				9.23		.	2414	53	HISTO. MEASURED SLANT
	2270		4.100				10.38		.	2363	57	AXIALLY ON OUTER NOZZLE
	2271		4.298				10.95		.	2318	74	LIP-LINE.
	2272	↓	1.896		↓	↓	2.89		.	2341	110	
1067		SLANT AX	-	-	5.310	13.839	.	.	.	.	.	SLANT AX. TRAVRS. ALONG
1068		↓	-	-	↓	↓	.	.	.	.	.	CENTERLINE OF OUTER STREAM

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-66 **AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER** TEST DATE 9/23/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	1219	3.403	846	1733	3.131	842	1678	1744	845	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF		1.510	6.694	13.793	PLUG TIP					
936		AX		.				.	0.0	.	.	
938				.				.		.	.	AX. TRAVRS. ON R/D_{eq}=0 AND
939				.	7.474			.	0.5	.	.	0.5
940				.				.		.	.	
	2161			1.511				0.01		1687	54	
	2162			1.549				0.52		1610	109	
	2163			1.595				1.14		1635	111	
	2164			1.632				1.63		1576	162	
	2165			1.668				2.11		1559	162	
	2166			1.710				2.68		1567	166	TURB. HISTO. MEASURED
	2167			1.750				3.21		1509	175	AXIALLY ON R/D_{eq}=0.5
	2168			1.795				3.81		1514	185	
	2169			1.833				4.32		1478	192	
	2170			1.869				4.80		1481	201	
	2171			1.914				5.40		1459	207	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-67 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h°, in.
2	1219	3.403	846	1733	3.131	842	1678	1744	845	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h'	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2172	AX		1.950	7.474	13.793		5.89	0.5	1442	202	
	2173			1.994				6.47		1394	219	
	2174			2.030				6.96		1347	224	
	2175			2.068				7.46		1296	226	
	2176			2.110				8.03		1292	229	
	2177			2.149				8.55		1242	236	TURB. HISTO. MEASURED
	2178			2.190				9.10		1232	219	AXIALLY ON r/D_{eq} = 0.5.
	2179			2.233				9.67		1204	219	
	2180			2.268				10.14		1177	239	
	2181			2.311				10.72		1171	240	
	2182	REF	0.501	2.353				11.28		1142	233	OUTER NOZZLE EXIT
941		RADIAL	0.530	.	.		0.09		.	.	.	
942			0.530	.	.		↓		.	.	.	
943			1.000	.	.		1.44		.	.	.	RADIAL TRAVERS. NEAR EXIT
944			1.000	.	.		↓		.	.	.	
94[illegible]			1.500	.	.		2.88		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-68 **AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER** TEST DATE 9/23/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	1219	2403	846	1733	3.131	842	1678	1744	845	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
946		RADIAL	1.500		.	13.793	2.88		.	.	.	
947		↓	2.000		.	↓	4.32		.	.	.	
948			2.000		.		↓		.	.	.	
949			2.500		.		5.77		.	.	.	
950			2.500		.		↓		.	.	.	
951			3.000		.		7.21		.	.	.	
952			3.000		.		↓		.	.	.	
953			3.500		.		8.65		.	.	.	RADIAL TRAVRS. NEAR
954			3.500		.		↓		.	.	.	EXIT
955			4.065		.		10.28		.	.	.	
956			4.065		.		↓		.	.	.	
957			3.708		.		9.25		.	.	.	
958			3.708		.		↓		.	.	.	
959			3.352		.		8.22		.	.	.	
960			3.352		.		↓		.	.	.	
961		↓	2.639		.	↓	6.17		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-69 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	1219	3.403	846	1733	3.131	842	1678	1744	845	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
962		RADIAL	2.639		.	13.793	6.17		.	.	.	
963			2.282		.		5.14		.	.	.	
964			2.282		.		↓		.	.	.	
965			1.962		.		4.22		.	.	.	
966			1.962		.		↓		.	.	.	
967			–		.		.		.	.	.	RADIAL TRAVERS. NEAR EXIT
968			–		.		.		.	.	.	
969			1.213		.		2.06		.	.	.	
970			1.213		.		↓		.	.	.	
971			0.856		.		1.03		.	.	.	
972		↓	0.856		.		↓		.	.	.	
1053		SLANT AX	.	.	4.013			.	.	.	.	
1054			.	.	↓			.	.	.	.	SLANT AX. TRAVERS. ALONG
1057			.	.	5.			.	.	.	.	INNER AND OUTER NOZZLE
1058		↓	.	.	↓		.	.	.	.	.	LIP-LINES, RESPECTIVELY
	REF →	SLANT AX	0.500	.	.	↓	OUTER NOZZLE EXIT					

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-70 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	1219	3.403	846	1733	3.131	842	1678	1744	845	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2232	SLANT AX	4.298		5.126	13.440	10.95			1661	50	
	2233		4.091				10.35			1700	37	
	2234		3.899				9.80			1719	31	
	2235		3.689				9.19			1728	40	
	2236		3.501				8.65			1725	35	
	2237		3.298				8.07			1716	33	
	2238		3.108				7.52			1718	29	
	2239		2.894				6.91			1700	34	TURB. HISTO. MEASURED
	2240		2.697				6.33			1688	39	SLANT AXIALLY ON OUTER
	2241		2.497				5.76			1685	35	NOZZLE LIP-LINE
	2242		2.297				5.18			1684	42	
	2243		2.092				4.59			1695	39	
	2244		1.900				4.04			1702	44	
	2245		1.700				3.46			1713	43	
	2246		1.495				2.87			1703	43	
	2247		1.302				2.31			1699	46	

NOMENCLATURE

P_r = Pressure Ratio | V_j = Fully Expanded Jet Velocity | D_{eq} = Equivalent Diameter

T_T = Total Temperature | $V_{a/c}$ = Free Jet Velocity | h = Annulus Height

TABLE 5-71 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/23/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	1219	3.403	846	1733	3.131	842	1678	1744	845	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2248	SLANT AX	1.102	/	5	↓	1.74	/	/	1691	46	TURB. HISTO. MEASURED
	2249	↓	0.905	/	↓	↓	1.17	/	/	1681	49	SLANT AXIALLY ON OUTER
	2250	↓	0.700	/	↓	↓	0.58	/	/	1635	65	NOZZLE LIP-LINE.
1055		SLANT AX	.	.	5.126	13.793	.	.	.	.	.	SLANT AX. TRAVRS. ALONG
1056		↓	.	.		↓	.	.	.	.	.	CENTERLINE OF OUTER STREAM

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-72 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/24/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	1220	3.409	873	1762	3.130	840	1677	1759	867	400	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.494	6.708	13.813	PLUG TIP					
1023		AX		.				.	0.0	.	.	
1024				.	↓			.	↓	.	.	AX. TRAVRS ON r/Deq = 0 AND
1025				.	7.508			.	0.5	.	.	0.5, RESPECTIVELY.
1026				.				.		.	.	
	2216			1.491				0.0		2351	108	
	2217			1.536				0.56		2135	222	
	2218			1.577				1.11		2243	232	
	2219			1.617				1.65		2000	338	
	2220			1.656				2.17		2042	300	TURB. HISTO. MEASURED AXIALLY
	2221			1.695				2.69		2039	326	ON r/Deq = 0.5.
	2222			1.733				3.20		1909	328	
	2223			1.778				3.80		2006	325	
	2224			1.813				4.27		1828	351	
	2225			1.852				4.79		1916	322	
	2226			1.934				5.89		1818	293	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-73

AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER

TEST DATE 9/24/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h°, in.
2	1220	3.409	873	1762	3.130	840	1677	1759	867	400	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2227	AX		2.016	7.508	13.813		6.98	0.5	1669	300	
	2228	↓		2.090	↓	↓		7.97	↓	1525	279	TURB. HISTO. MEASURED AXIALLY
	2229	↓		2.175	↓	↓		9.11	↓	1462	287	ON r/D_{eq} = 0.5.
	2230	↓		2.252	↓	↓		10.14	↓	1462	287	
	2231	↓		2.331	↓	↓		11.20	↓	1363	281	
		REF	0.500	1.469	-		OUTER NOZZLE LIP		.	.	.	
		RADIAL		.	.		.	.	.	.	.	
1027			0.530	.	.		0.09		.	.	.	
1028			↓	.	.		↓		.	.	.	
1029			0.896	.	.		1.14		.	.	.	
1030			↓	.	.		↓		.	.	.	
1031			1.292	.	.		2.28		.	.	.	
1032			↓	.	.		↓		.	.	.	RADIAL TRAVRS. NEAR EXIT
1033			1.670	.	.		3.37		.	.	.	
1034			↓	.	.		↓		.	.	.	
1035		↓	2.084	.	.	↓	4.57		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-74 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/24/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	1220	3.409	873	1762	3.130	840	1677	1759	867	400	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
1036		RADIAL	2.084	.	.	13.813	4.57		.	.	.	
1037			2.480	.	.		5.71		.	.	.	
1038			↓	.	.		↓		.	.	.	
1039			2.876	.	.		6.85		.	.	.	
1040			↓	.	.		↓		.	.	.	
1041			3.272	.	.		7.99		.	.	.	RADIAL TRAVRS. NEAR EXIT
1042			↓	.	.		↓		.	.	.	
1043			3.668	.	.		9.13		.	.	.	
1044			↓	.	.		↓		.	.	.	
1045			4.064	.	.		10.28		.	.	.	
1046		↓	↓	.	.	↓	↓		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-75 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/27/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	1220	3.609	873	1762	3.130	840	1677	1759	867	400	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.500	1.350	5.265	13.414	OUTER NOZZLE LIP			·	·	
		SLANT AX								·	·	
1071			-		4.866		·		·	·	·	
1072			-		↓		·		·	·	·	SLANT AX. TRAVRS. ALONG INNER
1075			-		5.265		·		·	·	·	AND OUTER NOZZLE LIP-LINES,
1076			·				·		·	·	·	RESPECTIVELY.
	2273		4.300				10.96		·	2341	110	
	2274		4.104				10.39		·	1697	36	
	2275		3.897				9.79		·	1713	29	
	2276		3.697				9.22		··	1729	33	
	2277		3.485				8.61		·	1730	35	TURB. HISTO. SLANT AXIALLY
	2278		3.301				8.08		·	1721	33	MEASURED ALONG OUTER NOZZLE
	2279		3.087				7.46		·	1712	36	LIP-LINE.
	2280		2.900				6.92		·	1705	29	
	2281		2.700				6.34		·	1686	34	
	2282		2.500				5.77		·	1685	39	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-76 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/27/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	1220	3.409	873	1762	3.130	840	1677	1759	867	400	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2283	SLANT AX	2.300		5.265	13.414	5.19			1678	39	
	2284		2.100				4.61			1671	55	
	2285		1.900				4.04			1680	55	
	2286		2.300				5.19			1675	40	TURB. HISTO. SLANT AXIALLY
	2287		1.700				3.46			1702	53	MEASURED ALONG OUTER
	2288		1.500				2.88			1684	59	NOZZLE LIP-LINE
	2289		1.300				2.31			1675	65	
	2290		1.100				1.73			1649	78	
	2291		0.800				0.86			1523	128	
	2292		0.900				1.15			1518	126	
1073		SLANT AX			5.122	13.44						SLANT AX. TRAVRS. ALONG
1074												OUTER STREAM CENTERLINE

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-77 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/27/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
2	201	-	-	-	3.141	855	1693	-	-	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	·	-	5.693	13.381	OUTER NOZZLE LIP					
1049		SLANT AX	·		5.203	↓	·	·	·	·	·	SLANT AX. TRAVES. ALONG
1050		↓	·		↓	↓	·	·	·	·	·	INNER STREAM CENTERLINE

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-78 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/30/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
3	319	3.317	1702	2453	3.128	872	1707	2282	1513	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF		1.580	6.809	13.842	PLUG TIP					
		AX										
1091				.				.	0.0	.	.	
1092				.	↓			.	↓	.	.	
1093				.	7.619			.	0.5	.	.	AX. TRAVRS. ON R/D_{eq} =0 AND
1094		↓		.	↓			.	↓	.	.	0.5, RESPECTIVELY.
1095		SLANT AX	.		3.937		.		.	.	.	
1096			.		↓		.		.	.	.	
1099			.		5.303		.		.	.	.	SLANT AX. TRAVRS. ALONG
1100		↓	.		↓	↓	.		.	.	.	INNER/OUTER NOZZLE LIP-LINES,
1097		SLANT AX	.	.	5.159	13.842	.	.	.	.	.	RESPECTIVELY.
1098		↓	.	.	↓	↓	.	.	.	.	.	SLANT AX. TRAVRS. ALONG OUTER STREAM CENTERLINE

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-79 — AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER — TEST DATE 9/30/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
3	320	3.318	1704	2455	3.126	866	1701	2282	1513	400	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF		1.581	6.831	13.893	PLUG TIP					
		AX						.	.			
1087		↓		.	↓	↓		.	0.0	.	.	AX. TRAVRS. ON R/D_{eq}=0 AND 0.5, RESPECTIVELY.
1088				.	↓			.	↓	.	.	
1089				.	7.631			.	0.5	.	.	
1090		↓		.	↓	↓		.	↓	.	.	

NOMENCLATURE

P_r = Pressure Ratio — V_j = Fully Expanded Jet Velocity — D_{eq} = Equivalent Diameter

T_T = Total Temperature — $V_{a/c}$ = Free Jet Velocity — h = Annulus Height

TABLE 5-80 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/30/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
3	1319	3.389	870	1755	3.122	847	1681	1762	866	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.547	6.674	13.793	PLUG TIP					
1079		AX		.	↓	↓		.	0.0	.	.	
1080		↓		.	↓	↓		.	↓	.	.	AX. TRAVRS. ON R/D_{eq} = 0
1081		↓		.	7.474	↓		.	0.5	.	.	AND 0.5, RESPECTIVELY
1082		↓		.	↓	↓		.	↓	.	.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-81 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/30/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h°, in.
3	1320	3.416	864	1754	3.126	856	1691	1743	863	400	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h'	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.547	6.674	13.793	PLUG TIP					
		AX		.	↓	↓		.		.	.	
1083		↓		.				.	0.0	.	.	
1084				.	↓			.	↓	.	.	AX. TRAVRS. ON $R/D_{eq}=0$
1085				.	7.482			.	0.5	.	.	AND 0.5, RESPECTIVELY.
1086		↓		.	↓	↓		.	↓	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-82 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 9/30/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h°, in.
3	301	-	-	-	3.128	852	1689	-	-	0	5.29	0.77

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF		1.580	6.809	13.842	PLUG TIP					
1077		AX		-	↓	↓	.	.	0	.	.	AX. TRAVRS. ON JET AXIS
1078		↓		-	↓	↓	.	.	↓	.	.	AFTER PLUG

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

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TABLE 5-83 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/5/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
4	415	3.136	1692	2396	2.918	863	1654	2243	1521	0	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	.	1.558	6.881	13.716	PLUG TIP					
1129		AX		.				.	0.0	.	.	
1130				.				.		.	.	AX. TRAVRS. ON R/Deq = 0 AND
1131				.	7.709			.	0.5	.	.	0.5, RESPECTIVELY.
1132				.				.		.	.	
	2317			1.558				0.00		1729	233	
	2318			1.601				0.55		1595	193	
	2319			1.637				1.00		1598	248	
	2320			1.683				1.59		1583	226	
	2321			1.720				2.06		1568	202	
	2322			1.761				2.60		1540	143	HISTO. MEASURED AXIALLY
	2323			1.802				3.10		1524	143	ON R/Deq = 0.5
	2324			1.844				3.63		-	-	
	2325			1.886				4.17		1495	160	
	2326			1.924				4.65		1466	161	
	2327			2002				5.64		1396	190	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-84 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/5/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	415	3.136	1692	2376	2.918	863	1654	2243	1521	0	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2328	AX		2.081	7.709	13.716		6.65	0.5	-	-	
	2329			2.081				6.65		1325	195	
	2330			2.163				7.69		1267	195	
	2331			2.238				8.64		-	-	HISTO. MEASURED AXIALLY
	2332			2.238				8.64		1194	232	ON r/D_{eq}=0.5.
	2333			2.322				9.71		1157	212	
	2334			1.542				-0.20		1736	279	
		REF	0.500	-	-		OUTER NOZZLE EXIT					
1133		RADIAL	0.530		·		0.05	·	·	·	·	
1134			↓		·		↓	·	·	·	·	
1135			0.960		·		0.80	·	·	·	·	
1136			↓		·		↓	·	·	·	·	
1137			1.420		·		1.61	·	·	·	·	RADIAL TRAVRS. NEAR EXIT
1138			↓		·		↓	·	·	·	·	
1139			1.880		·		2.41	·	·	·	·	
1140			↓		·		↓	·	·	·	·	
1141			2.340		·		3.22	·	·	·	·	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-85 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/5/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	415	3.136	1692	2396	2.918	863	1654	2243	1521	0	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
1142		RADIAL	2.340		.	13.716	3.22	.	.	.	.	
1143		↓	2.800		.	↓	4.02	.	.	.	.	
1144		↓	↓		.	↓	↓	.	.	.	.	
1145		↓	3.260		.	↓	4.82	.	.	.	.	
1146		↓	↓		.	↓	↓	.	.	.	.	
1147		↓	3.720		.	↓	5.63	.	.	.	.	RADIAL TRAVES. NEAR EXIT
1148		↓	↓		.	↓	↓	.	.	.	.	
1149		↓	4.180		.	↓	6.43	.	.	.	.	
1150		↓	↓		.	↓	↓	.	.	.	.	
1151		↓	4.640		.	↓	7.24	.	.	.	.	
1152		↓	↓		.	↓	↓	.	.	.	.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-86 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/5/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	415	3.136	1692	2396	2918	863	1654	2243	1521	0	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.500	-	5.677	13.640	OUTER NOZZLE LIP					
1209		SLANT AX	·		5.109		·		0.0	·	·	
1210			·		↓		·		↓	·	·	
1153			·		5.677		·		0.5	·	·	SLANT AX. TRAVRS. ON
1154			·				·			·	·	INNER/OUTER NOZZLE LIP-LINE,
	2335		4.827				7.56			-	-	RESPECTIVELY.
	2336		4.827				↓			-	-	
	2337		4.827							-	-	
	2338		4.410				6.83			-	-	
	2339		4.410				↓			1740	278	
	2340		3.950				6.03			-	-	
	2341		3.950				↓			-	-	HISTO. MEASURED SLANT
	2342		3.950							1918	251	AXIALLY ALONG OUTER NOZZLE
	2343		3.490				5.23			-	-	LIP-LINE.
	2344		3.030				4.42			-	-	
	2345	↓	2.570		↓	↓	3.62		↓	2209	208	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-87 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/5/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	415	3.136	1692	2396	2.918	863	1654	2263	1521	0	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2346	SLANT AX	2.340		5.677	13.440	3.22		0.5	2154	177	
	2347		2.110				2.81			2272	204	
	2348		1.880				2.41			2192	153	
	2349		1.650				2.01			-	-	
	2350		1.420				1.61			2246	200	HISTO. MEASURED SLANT
	2351		1.190				1.21			2181	185	AXIALLY ALONG OUTER
	2352		0.960				0.80			-	-	NOZZLE LIP-LINE.
	2353		0.730				0.40			-	-	
	2354		0.530				0.05			1641	158	
1207		SLANT AX	·	·	5.557	13.460	·	·	·	·	·	SLANT AX. TRAVRS. ALONG
1208	·		·	·			·	·		·	·	OUTER STREAM CENTERLINE

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-88 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/6/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	416	3.118	1699	2396	2.922	873	1664	2266	1529	400	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.500	1.558	6.926	13.823	PLUG TIP					
		AX						.	.	.	.	
1183				.				.	0.0	.	.	
1184				.				.		.	.	AX. TRAVRS. ON Y/D_{eq} = 0
1185				.	7.757			.	0.5	.	.	AND 0.5, RESPECTIVELY.
1186				.				.		.	.	
	2377			2.321				9.69		1303	159	
	2378			2.264				8.72		1336	155	
	2379			2.160				7.65		1395	159	
	2380			2.079				6.62		1453	137	
	2381			1.998				5.59		1500	138	HISTO. MEASURED ON
	2382			1.921				4.61		1520	129	Y/D_{eq} = 0.5
	2383			-				-		-	-	
	2384			1.561				0.04		1688	192	
	2385			1.602				0.56		1646	171	
	2386			1.640				1.04		1656	147	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-89 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/6/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	416	3.118	1699	2396	2.922	873	1664	2264	1529	400	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2387	AX		1.680	7.757	13.823		1.55	0.5	1657	129	
	2388			1.718	↓	↓		2.03	↓	1640	128	
	2389			1.680				1.55		1657	139	TURB. HISTO. MEASURED AXIALLY
	2390			1.755				2.50		1627	124	ON $R/D_{eq}=0.5$
	2391			1.798				3.05		1608	129	
	2392			1.861				3.60		1593	137	
	2393	↓		1.877	↓			4.05	↓	1565	138	
		REF	0.500	1.415	-		OUTER NOZZLE EXIT			.	.	
1187		RADIAL	0.530		.		0.05	.		.	.	
1188			↓		.		↓	.		.	.	
1189			0.960		.		0.80	.		.	.	
1190			↓		.		↓	.		.	.	RADIAL TRAVS. NEAR EXIT.
1191			1.420		.		1.61	.		.	.	
1192			↓		.		↓	.		.	.	
1193			1.880		.		2.41	.		.	.	
1194		↓	↓		.	↓	↓	.		.	.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-90 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/6/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	416	3.118	1699	2396	2.922	873	1664	2264	1529	400	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
1195		RADIAL	2.340		.	13.823	3.22	.	.	.	.	
1196			↓		.	↓	↓	.	.	.	.	
1197			2.800		.		4.02	.	.	.	.	
1198			↓		.		↓	.	.	.	.	
1199			3.260		.		4.82	.	.	.	.	
1200			↓		.		↓	.	.	.	.	RADIAL TRAVRS. NEAR
1201			3.720		.		5.63	.	.	.	.	EXIT.
1202			↓		.		↓	.	.	.	.	
1203			4.180		.		6.43	.	.	.	.	
1204			↓		.		↓	.	.	.	.	
1205			4.640		.		7.24	.	.	.	.	
1206			↓		.	↓	↓	.	.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-91 **AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER** TEST DATE 10/7/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	416	3.118	1699	2396	2.922	873	1664	2264	1529	400	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.830	1.392	5.760	13.316	OUTER NOZZLE LIP					
1227		SLANT AX	-		5.278		.	.	.	.	.	
1228			-		↓		.	.	.	.	.	SLANT AX. TRAVRS. ON INNER
1225			-		5.846		.	.	.	.	.	AND OUTER NOZZLE LIP-LINES
1226			-				.	.	.	.	.	
	2434		0.575				0.08			-	-	
	2435		0.575				0.08			1649	150	
	2436		0.730				0.35			1949	164	
	2437		0.960				0.75			2140	165	
	2438		1.190				1.15			2097	168	TURB. HISTO. MEASURED
	2439		1.420				1.56			2205	135	SLANT AXIALLY ON
	2440		1.650				1.96			2227	158	OUTER NOZZLE LIP-LINE.
	2441		1.880				2.36			2147	185	
	2442		2.110				2.76			2178	200	
	2443		2.110				2.76			2177	229	
	2444	↓	2.110		↓	↓	2.76			2160	220	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-92 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/7/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
4	416	3.118	1699	2396	2.922	873	1664	2264	1529	400	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2445	SLANT AX	2.340		5.846	13.316	3.16	.	.	2029	268	
	2446		2.570				3.57	.	.	2072	271	
	2447		3.030				4.37	.	.	1942	278	TURB. HISTO. MEASURED
	2448		3.490				5.17	.	.	1871	277	SLANT AXIALLY ON
	2449		3.950				5.98	.	.	1810	243	OUTER NOZZLE LIP-LINE.
	2450		4.410				6.78	.	.	1705	217	
	2451		4.877				7.60	.	.	1626	193	
1223			.	.	5.727	13.316	.	.	.	.	.	SLANT AX. TRAVRS. ALONG
1224		↓	.	.	↓	↓	.	.	.	.	.	OUTER STREAM CENTERLINE

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-93 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/5/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	1415	3.202	853	1703	2.910	855	1644	1694	853	0	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF		1.530	6.719	13.719	PLUG TIP					
1101		AX		.				.	0.0	.	.	
1102				.				.		.	.	AX. TRAVRS. ON Y/D_{eq} = 0
1103				.	7.557			.	0.5	.	.	AND 0.5, RESPECTIVELY
1104				.				.		.	.	
	2296			1.530				0.00		1347	164	
	2297			1.575				0.57		1268	161	
	2298			1.614				1.07		1256	116	
	2299			1.653				1.56		1250	105	
	2300			1.692				2.06		1225	109	
	2301			1.734				2.59		1223	97	HISTO. MEASURED AXIALLY
	2302			1.771				3.06		1213	106	ON Y/D_{eq} = 0.5
	2303			1.816				3.63		1202	103	
	2304			1.854				4.12		1185	122	
	2305			1.891				4.59		1165	125	
	2306			1.936				5.16		1161	128	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-94 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/5/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h°, in.
4	1415	3.202	853	1703	2.910	855	1664	1694	853	0	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2307	AX		1.973	7.557	13.719		5.63	0.5	1139	128	
	2308	↓		2.009	↓	↓		6.09	↓	1113	139	
	2309			2.051				6.62		1088	124	
	2310			2.093				7.15		-	-	
	2311			2.093				7.15		-	-	HISTO. MEASURED AXIALLY
	2312			2.131				7.64		1027	158	ON Y/D_{eq} = 0.5.
	2313			2.174				8.18		1020	163	
	2314			2.210				8.64		996	177	
	2315			2.255				9.21		991	178	
	2316			2.290				9.66		974	177	
1105		REF RADIAL	0.500 0.530	- .	- .		OUTER NOZZLE EXIT 0.05	.	.	.	.	
1106		↓	↓	.	.		↓	.	.	.	.	
1107			0.960	.	.		0.80	.	.	.	.	
1108			↓	.	.		↓	.	.	.	.	RADIAL TRAVERS. NEAR EXIT
1109			1.420	.	.		1.61	.	.	.	.	
1110		↓	↓	.	.	↓	↓	.	.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-95 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/5/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
4	1415	3.202	853	1703	2.910	855	1644	1684	853	0	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
1111		RADIAL	1.880			13.719	2.41					
1112		↓	↓			↓	↓					
1113		↓	2.340			↓	3.22					
1114		↓	↓			↓	↓					
1115		↓	2.800			↓	4.02					
1116		↓	↓			↓	↓					
1117		↓	3.260			↓	4.82					
1118		↓	↓			↓	↓					RADIAL TRAVS. NEAR EXIT
1119		↓	3.720			↓	5.63					
1120		↓	↓			↓	↓					
1121		↓	4.180			↓	6.43					
1122		↓	↓			↓	↓					
1123		↓	4.640			↓	7.24					
1124		↓	↓			↓	↓					
1125		↓	4.877			↓	7.65					
1126		↓	↓			↓	↓					

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-96 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/7/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	1615	3.202	853	1703	2.910	855	1644	1694	853	0	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.500	-	5.729	13.302	OUTER NOZZLE LIP					
1215		SLANT AX	-		5.152		·	·	·	·	·	
1216			-		↓		·	·	·	·	·	SLANT AX. TRAVRS. ALONG
1213			·		5.729		·	·	·	·	·	INNER/OUTER NOZZLE LIP-LINE
1214			·				·			·	·	
	2394		4.877				7.65	·	·	1345	157	
	2395		4.640				7.24	·	·	1409	159	
	2396		4.410				6.83	·	·	1446	146	
	2397		4.180				6.43	·	·	1492	145	
	2398		3.950				6.03	·	·	1517	127	
	2399		3.720				5.63	·	·	1537	123	HISTO. MEASURED ON OUTER NOZZLE
	2400		3.490				5.23	·	·	1557	111	LIP-LINE
	2401		3.260				4.82	·	·	1543	128	
	2402		3.030				4.42	-	-	1575	113	
	2403		2.800				4.02	·	·	1549	121	
	2404	↓	2.570		↓	↓	3.62	·	·	1630	91	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-97 — AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER — TEST DATE 10/7/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	1415	3.202	853	1703	2.910	855	1644	1694	853	0	6.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2405	SLANT AX	2.340		.	13.302	3.22	.	.	1578	82	
	2406		2.110		.		2.81	.	.	1695	78	
	2407		1.880		.		2.41	.	.	1583	65	
	2408		1.650		.		2.01	.	.	1694	85	
	2409		1.420		.	.	1.61	.	.	1632	78	HISTO. MEASURED ON
	2410		1.190		.		1.21	.	.	1636	70	OUTER NOZZLE LIP LINE
	2411		0.960		.		0.80	.	.	1645	86	
	2412		0.730		.		0.40	.	.	1501	101	
	2413	↓	0.572		.		0.13	.	.	1240	128	
1211		SLANT AX	.		5.545	.	.	.	.	.	.	SLANT AX. TRAVRS. ALONG
1212		↓	.		↓		.	.	.	.	.	OUTER STREAM CENTERLINE

NOMENCLATURE

P_r = Pressure Ratio — V_j = Fully Expanded Jet Velocity — D_{eq} = Equivalent Diameter

T_T = Total Temperature — $V_{a/c}$ = Free Jet Velocity — h = Annulus Height

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TABLE 5-98 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/6/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	146	3.216	878	1730	2.909	847	1636	1716	873	400	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.533	6.736	13.676	PLUG TIP					
1157		AX		.				.	0.0	.	.	
1158				.				.		.	.	AX. TRAVRS. ON r/Deq=0
1159				.	7.592			.	0.5	.	.	AND 0.5, RESPECTIVELY
1160				.				.			.	
	2356			2.373				10.67		1063	146	
	2357			2.290				9.62		1099	137	
	2358			2.249				9.10		1107	125	
	2359			2.209				8.59		1122	120	
	2360			2.171				8.11		1145	120	
	2361			2.129				7.57		1155	117	HISTO. MEASURED AXIALLY
	2362			2.090				7.08		1170	115	ON r/Deq = 0.5.
	2363			2.053				6.61		1196	109	
	2364			2.013				6.10		1210	99	
	2365			1.973				5.59		1221	99	
	2366			1.890				4.54		1234	88	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-99 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/6/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
4	1616	3.216	878	1730	2.909	847	1636	1716	873	400	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2367	AX		1.890	7.592	13.676		4.54	0.5	1243	88	
	2368			1.850				4.03		1251	89	
	2369			1.813				3.56		1263	90	
	2370			1.775				3.07		1269	89	
	2371			1.732				2.53		1282	91	HISTO. MEASURED AXIALLY
	2372			1.691				2.00		1304	89	ON R/D_{eq} = 0.5
	2373			1.655				1.55		1318	100	
	2374			1.612				1.00		1353	119	
	2375			1.570				0.47		1400	139	
	2376			1.536				0.04		1405	145	
		REF	0.500	1.389	8.231	13.676	OUTER NOZZLE LIP					
1161		RADIAL	0.530				0.05					
1162			↓				↓					RADIAL TRAVRS. NEAR EXIT
1163			0.960				0.80					
1164			↓				↓					
1165			1.420				1.61					

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-100 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/6/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
4	1646	3.216	878	1730	2.909	847	1636	1716	873	400	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
1166		RADIAL	1.42		8.231	13.676	1.61	.	.	.	.	
1167			1.88		.		2.41	.	.	.	.	
1168			↓		.		↓	.	.	.	.	
1169			2.34		.		3.22	.	.	.	.	
1170			↓		.		↓	.	.	.	.	
1171			2.80		.		4.02	.	.	.	.	
1172			↓		.		↓	.	.	.	.	
1173			3.26		.		4.82	.	.	.	.	RADIAL TRAVRS. NEAR EXIT.
1174			↓		.		↓	.	.	.	.	
1175			3.72		.		5.63	.	.	.	.	
1176			↓		.		↓	.	.	.	.	
1177			4.180		.		6.43	.	.	.	.	
1178			↓		.		↓	.	.	.	.	
1179			4.68		.		7.24	.	.	.	.	
1180		↓	↓		.		↓	.	.	.	.	
					.	↓						

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-101 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 10/7/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^c, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
4	646	3.216	878	1730	2.909	847	1636	1716	873	400	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.500	1.364	5.720	13.320	OUTER NOZZLE LIP					
1221		SLANT AX.	.		5.164		.	.	.	.	.	
1222			.		↓		.	.	.	.	.	SLANT AX. TRAVRS. ON
1219			.		5.720		.	.	.	.	.	INNER/OUTER NOZZLE LIP-LINES
1220			.				.	.	.	.	.	RESPECTIVELY.
	2414		4.877				7.65	.	.	1281	160	
	2415		4.640				7.24	.	.	1343	157	
	2416		4.410				6.84	.	.	1408	166	
	2417		4.180				6.43	.	.	1650	135	
	2418		3.950				6.03	.	.	1692	128	
	2419		3.720				5.63	.	.	1541	105	TURB. HISTO. MEASURED
	2420		3.490				5.23	.	.	1522	103	SLANT AXIALLY ON
	2421		3.260				4.82	.	.	1598	97	OUTER NOZZLE LIP-LINE.
	2422		3.030				4.43	.	.	1554	89	
	2423		2.800				4.02	.	.	1632	90	
	2424		2.570				3.62	.	.	1610	68	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-102 **AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER** TEST DATE 10/7/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
4	1616	3.216	878	1730	2.909	847	1636	1716	873	400	5.57	1.27

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2425	SLANT AX	2.340		5.720	13.320	3.22	.	.	1604	74	
	2426	↓	2.110		↓	↓	2.81	.	.	1659	68	
	2427		1.880				2.61	.	.	1560	66	
	2428		1.650				2.01	.	.	1680	71	
	2429		1.420				1.61	.	.	1629	73	TURB. HISTO. MEASURED
	2430		1.190				1.21	.	.	1591	83	SLANT AXIALLY ON
	2431		0.960				0.80	.	.	1668	85	OUTER NOZZLE LIP-LINE.
	2432		0.730				0.40	.	.	1517	108	
	2433	↓	0.588		↓	↓	0.15	.	.	1315	122	SLANT AX. TRAVRS. ALONG
1217	.	SLANT AX	.		5.544	13.320	.	.	.	.	.	OUTER STREAM CENTERLINE
1218	.	↓	.		↓	↓	.	.	.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-103 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/4/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	511	3.128	1709	2406	2.918	859	1649	2246	1530	0	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	·	1.578	7.034	13.753	PLUG TIP					
1239		AX		·	↓			·	0.0	·	·	
1240				·	7.839			·	↓	·	·	AX-TRAVRS. ON Y/Deq=0 AND
1241				·				·	0.5	·	·	0.5, RESPECTIVELY
1242				·				·		·	·	
	2474			1.580				0.03		2096	166	
	2475			1.620				0.53		1890	210	
	2476			1.660				1.04		1902	181	
	2477			1.700				1.55		1868	198	
	2478			1.740				2.06		1883	177	HISTO. MEASURED AXIALLY
	2479			1.780				2.57		1832	187	ON Y/Deq=0.5
	2480			1.820				3.08		1821	202	
	2481			1.860				3.59		1773	197	
	2482			1.900				4.10		1712	193	
	2483			1.940				4.61		1670	205	
	2484	↓		2.020	↓	↓		5.63	↓	1563	219	

NOMENCLATURE

P_r = Pressure Ratio
T_T = Total Temperature
V_j = Fully Expanded Jet Velocity
$V_{a/c}$ = Free Jet Velocity
D_{eq} = Equivalent Diameter
h = Annulus Height

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TABLE 5-104 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/9/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
5	511	3.128	1709	2406	2.918	859	1649	2246	1530	0	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2485	AX		2.100	7.839	13.753		6.64	0.5	1495	221	
	2486	↓		2.180	↓	↓		7.66	↓	1432	229	HISTO. MEASURED AXIALLY
	2487			2.260				8.68		1374	256	ON X/D_{eq} = 0.5.
	2488	↓		2.340	↓	↓		9.70	↓	1342	240	
1243		RADIAL		1.448	·	13.753		-1.65	·	·	·	
1244				↓	·			↓	·	·	·	
1245				1.461	·			-1.49	·	·	·	
1246				↓	·			↓	·	·	·	
1247				1.475	·			-1.31	·	·	·	
1248				↓	·			↓	·	·	·	RADIAL MEAN TRAVS.
1249				1.489	·			-1.13	·	·	·	NEAR EXIT
1250				↓	·			↓	·	·	·	
1251				1.503	·			-0.95	·	·	·	
1252				↓	·			↓	·	·	·	
1253				1.517	·			-0.78	·	·	·	
1254		↓		↓	·	↓		↓	·	·	·	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-105 — AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER — TEST DATE 11/4/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	511	3.128	1709	2406	2.918	859	1649	2246	1530	0	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
1255		RADIAL		1.531	.	13.753		−0.60	.	.	.	
1256		↓		↓	.	↓		↓	.	.	.	
1257		↓		1.545	.	↓		−0.42	.	.	.	RADIAL MEAN VELOCITY
1258		↓		↓	.	↓		↓	.	.	.	TRAVRS. NEAR EXIT
1259		↓		1.573	.	↓		−0.06	.	.	.	
1260		↓		↓	.	↓				.	.	

NOMENCLATURE

P_r = Pressure Ratio — V_j = Fully Expanded Jet Velocity — D_{eq} = Equivalent Diameter

T_T = Total Temperature — $V_{a/c}$ = Free Jet Velocity — h = Annulus Height

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TABLE 5-106 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/9/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	511	3.128	1709	2406	2.918	859	1649	2246	1530	0	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.200	1.421	5.642	13.332	OUTER NOZZLE		LIP			
2567		SLANT AX	.		5.452	.	.			.	.	
2568			.		↓		.			.	.	
2569			.		5.636		.			.	.	SLANT AX. TRAVS. ALONG OUTER
2570			.		↓		.			.	.	STREAM CENTER-LINE, OUTER LIP-
2571			.		5.214		.			.	.	LINE AND INNER LIP-LINE,
2572			.		↓		.			.	.	RESPECTIVELY.
	2588		0.230		5.636		0.05			1839	164	
	2589		0.422				0.38			1823	270	
	2590		0.643				0.76			1522	353	
	2591		0.865				1.14			1192	352	HISTO. MEASURED SLANT AXIALLY
	2592		1.082				1.52			1180	359	ALONG OUTER NOZZLE LIP-LINE
	2593		1.304				1.90			1126	342	
	2594		1.521				2.27			1176	345	
	2595		1.743				2.66			1350	355	
	2596	↓	1.960		↓	↓	3.03			1548	365	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-107 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/9/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	511	3.128	1709	2406	2.918	859	1649	2246	1530	0	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2597	SLANT AX	2.182		5.636	13.332	3.41			1748	334	
	2598		2.399				3.78			1897	290	
	2599		2.621				4.17			2003	244	
	2600		3.060				4.92			2071	197	HISTO. MEASURED SLANT AXIALLY
	2601		3.060				4.92			2066	198	ALONG OUTER NOZZLE LIP-LINE
	2602		3.499				5.68			2097	191	
	2603		3.938				6.43			2091	182	
	2604		4.155				6.81			2081	175	
	2605		4.377				7.19			2059	179	

NOMENCLATURE

P_r = Pressure Ratio
T_T = Total Temperature
V_j = Fully Expanded Jet Velocity
$V_{a/c}$ = Free Jet Velocity
D_{eq} = Equivalent Diameter
h = Annulus Height

TABLE 5-108 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/5/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
5	512	3.120	1651	2361	2.910	848	1637	2209	1483	400	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h'	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.570	7.051	13.753	PLUG TIP					
2531		AX		.				.	0.00	.	.	
2532				.	↓			.	↓	.	.	AX TRAVRS. ON r/Deq=0
2533				.	7.890			.	0.50	.	.	AND 0.5, RESPECTIVELY.
2534				.				.		.	.	
	2511			1.570				0.00		2071	168	
	2512			1.610				0.51		1836	198	
	2513			1.650				1.02		1833	185	
	2514			1.690				1.53		1813	176	
	2515			1.730				2.04		1817	174	TURB. HISTO. MEASURED
	2516			1.770				2.55		1785	187	AXIALLY ON r/Deq=0.5.
	2517			1.810				3.05		1773	181	
	2518			1.850				3.56		1750	170	
	2519			1.890				4.07		1720	181	
	2520			1.930				4.58		1710	168	
	2521			2.010				5.60		1612	176	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-109 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/5/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
5	512	3.120	1651	2361	2.910	848	1637	2209	1483	400	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	2522	AX		2.090	7.890	13.753		6.62	0.50	1520	208	
	2523			2.170				7.64		1461	212	TURB. HISTO. MEASURED AXIALLY
	2524			2.250				8.66		1394	219	ALONG R/D_{eq}=0.5.
	2525	↓		2.330	↓	↓		9.67	↓	1363	209	
										.	.	
		REF	0.200	1.437	8.623	13.754	OUTER NOZZLE LIP			.	.	
2535		RADIAL	0.230		.		0.05			.	.	
2536			↓		.		↓			.	.	
2537			0.643		.		0.76			.	.	
2538			↓		.		↓			.	.	
2539			1.082		.		1.52			.	.	RADIAL TRAVRS. NEAR EXIT.
2540			↓		.		↓			.	.	
2541			1.521		.		2.27			.	.	
2542			↓		.		↓			.	.	
2543			1.960		.		3.03			.	.	
2544		↓	↓		.	↓	↓			.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-110 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/5/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	512	3.120	1651	2361	2.910	848	1637	2209	1483	400	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
2545		RADIAL	2.379			13.754	3.78					
2546		↓	↓			↓	↓					
2547			2.838				4.54					
2548			↓				↓					
2549			3.277				5.30					RADIAL TRAVRS. NEAR EXIT.
2550			↓				↓					
2551			3.716				6.05					
2552			↓				↓					
2553			4.155				6.81					
2554		↓	↓			↓	↓					

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-111 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/8/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	512	3.120	1651	2361	2.910	848	1637	2209	1483	400	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.200	1.419	5.612	13.312	OUTER NOZZLE LIP					
		SLANT AX										
2555			·		5.429		·			·	·	
2556			·		↓		·			·	·	
2557			·		5.612		·			·	·	SLANTAX. TRAVS. ALONG CENTER-
2558			·				·			·	·	LINE OF OUTER STREAM AND
												OUTER NOZZLE LIP-LINE,
	2526		4.155				6.81			2079	179	RESPECTIVELY.
	2527		3.716				6.05			2144	169	
	2528		3.277				5.30			2182	166	
	2529		3.277				↓			2185	162	TURB. HISTO. MEASURED
	2530		3.838				6.26			2211	148	SLANT AXIALLY ALONG
	2531		2.399				3.78			2128	183	OUTER NOZZLE LIP-LINE.
	2532		2.182				3.41			2031	223	
	2533		1.960				3.03			1917	270	
	2534		1.960				3.03			1910	267	
	2535		1.743				2.66			1682	321	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-112 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/8/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	512	3.120	1651	2361	2.910	848	1637	2209	1483	400	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2536	SLANT AX	1.521		5.612	13.312	2.27			1400	304	
	2537		1.304				1.90			1108	386	
	2538		1.082				1.52			1429	353	TURB. HISTO. MEASURED SLANT
	2539		0.865				1.14			1522	324	AXIALLY ALONG OUTER NOZZLE
	2540		0.643				0.76			1805	300	LIP-LINE.
	2541		0.422				0.38			2082	158	
	2542		0.230				0.05			1912	140	
	2543		0.230				0.05			1894	144	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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ORIGINAL PAGE IS OF POOR QUALITY

TABLE 5-113 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/4/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	1511	3.212	855	1707	2.911	846	1638	1696	854	0	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.553	6.845	13.63	PLUG TIP					
1215		AX		-				.	0	.	.	
1216				-	↓			.	↓	.	.	AX. TRAVRS. ON $r/D_{eq}=0$
1217				-	7.674			.	0.5	.	.	AND 0.5, RESPECTIVELY.
1218				-				.		.	.	
	2453			1.550				0.0		1585	103	
	2454			↓				0.0		1595	102	
	2455			1.590				0.47		1454	140	
	2456			1.630				0.98		1451	123	HISTO. MEASURED AXIALLY
	2457			1.670				1.49		1421	129	ON $r/D_{eq}=0.5$
	2458			1.710				2.00		1420	116	
	2459			1.750				2.51		1388	124	
	2460			1.790				3.02		1393	142	
	2461			1.830				3.53		1368	126	
	2462			1.870				4.03		1354	138	
	2463	↓		1.910	↓	↓		4.54	↓	1338	142	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-114 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/4/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	1511	3.212	855	1707	2.911	846	1638	1696	854	0	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2464	AX		1.950	7.674	13.630		5.05	0.5	1322	144	
	2465			1.990				5.56		1289	164	
	2466			2.030				6.07		1245	159	
	2467			2.070				6.58		1233	158	HISTO. MEASURED AXIALLY
	2468			2.110				7.09		1199	185	ON R/Deq = 0.5.
	2469			2.150				7.60		1175	188	
	2470			2.190				8.11		1147	180	
	2471			2.230				8.62		1142	179	
	2472			2.270				9.13		1120	181	
	2473	↓		2.310	↓			9.64	↓	1102	185	
1219		REF RADIAL	[illegible].104 0.130	1.417	8.441		OUTER NOZZLE EXIT 0.04		.	.	.	
1220			↓	.	.		↓		.	.	.	
1221			0.543	.	.		0.76		.	.	.	RAD. TRAVRS. NEAR EXIT
1222			↓	.	.		↓		.	.	.	
1223			0.982	.	.		1.51		.	.	.	
1224		↓	↓	.	.	↓	↓		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-115 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/4/82

ORIGINAL PAGE IS OF POOR QUALITY

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
5	1511	3.212	855	1707	2.911	846	1638	1696	854	0	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
1225		RADIAL	1.621	.	.	13.630	2.27		.	.	.	
1226		↓	↓			↓	↓		.	.	.	
1227			1.860				3.02		.	.	.	
1228			↓				↓		.	.	.	
1229			2.299				3.78		.	.	.	
1230			↓				↓		.	.	.	RAD. TRAVRS. NEAR EXIT
1231			2.738				4.53		.	.	.	
1232			↓				↓		.	.	.	
1233			3.177				5.29		.	.	.	
1234			↓				↓		.	.	.	
1235			3.616				6.04		.	.	.	
1236			↓				↓		.	.	.	
1237			4.055				6.80		.	.	.	
1238		↓	↓			↓	↓		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-116 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/09/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	1511	3.212	855	1707	2.911	846	1638	1696	854	0	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.200	1.392	5.486	13.242	OUTER NOZZLE LIP					
2563		SLANT AX	.		5.256		.			.	.	SLANT AX. TRAVES. ALONG
2564			.		↓		.			.	.	CENTERLINE OF OUTER STREAM
2565			.		5.450		.			.	.	SLANT AX. TRAVRS. ALONG
2566			.				.			.	.	OUTER NOZZLE LIP-LINE.
	2565		0.230				0.05			1455	84	
	2566		0.622				0.38			1625	76	
	2567		0.643				0.76			1450	207	
	2568		0.865				1.14			1178	249	
	2569		1.082				1.52			1175	246	HISTO. MEASURED SLANT
	2570		1.304				1.90			1255	266	AXIALLY ALONG OUTER
	2571		1.521				2.27			1082	249	NOZZLE LIP-LINE
	2572		1.743				2.66			1158	240	
	2573		1.743				2.66			1161	258	
	2574		1.960				3.03			1261	250	
	2575		2.182				3.41			1337	221	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-117 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/9/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	1511	3.212	855	1707	2.911	846	1638	1696	854	0	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2576	SLANT AX	2.399		5.450	13.262	3.78			1496	200	
	2577		2.621				4.17			1567	152	
	2578		2.838				4.54			1572	138	
	2579		3.060				4.92			1613	113	
	2580		3.277				5.30			1610	103	
	2581		3.499				5.68			1616	99	HISTO. MEASURED SLANT
	2582		3716				6.05			1612	100	AXIALLY ALONG OUTER
	2583		3.938				6.43			1599	110	NOZZLE LIP-LINE
	2584		4.155				6.81			1587	110	
	2585		4.377				7.19			1572	118	
	2586		1.521				2.27			1030	248	
	2587		1.304				1.90			1030	243	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-118

AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER

TEST DATE 11/5/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	1514	3.214	897	1749	2.919	865	1656	1734	892	400	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.545	6.867	13.665	PLUG TIP					
1261		AX		.					0.0	.	.	
1262				.	↓				↓	.	.	AX. TRAVRS. ON r/Deq=0
1263				.	7.706				0.5	.	.	AND 0.5, RESPECTIVELY.
1264				.						.	.	
	2489			1.545				0.00		1599	99	
	2490			↓				↓		1597	97	
	2491			1.585				0.51		1443	131	
	2492			1.625				1.02		1447	109	
	2493			1.665				1.53		1423	108	HISTO. MEASURED AXIALLY
	2494			1.705				2.04		1426	104	ON r/Deq=0.5.
	2495			1.745				2.55		1403	102	
	2496			1.785				3.05		1401	111	
	2497			1.825				3.56		1382	112	
	2498			1.865				4.07		1375	111	
	2499	↓		1.905	↓	↓		4.58	↓	1346	110	

NOMENCLATURE

P_r = Pressure Ratio
V_j = Fully Expanded Jet Velocity
D_{eq} = Equivalent Diameter
T_T = Total Temperature
$V_{a/c}$ = Free Jet Velocity
h = Annulus Height

TABLE 5-119 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/5/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
5	1514	3.214	897	1749	2.919	865	1656	1734	892	400	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2500	AX		1.945	7.706	13.645		5.09	0.5	1333	121	
	2501			1.985				5.60		1298	130	
	2502			2.025				6.11		1266	132	
	2503			2.065				6.62		1258	140	
	2504			2.105				7.13		1223	135	HISTO. MEASURED AXIALLY
	2505			2.145				7.64		1213	133	ON R/Deq = 0.5
	2506			2.185				8.15		1203	141	
	2507			2.225				8.66		1190	158	
	2508			2.265				9.16		1165	157	
	2509			2.305				9.67		1155	157	
	2510			2.345				10.18		1138	159	

NOMENCLATURE

P_r = Pressure Ratio
T_T = Total Temperature
V_j = Fully Expanded Jet Velocity
$V_{a/c}$ = Free Jet Velocity
D_{eq} = Equivalent Diameter
h = Annulus Height

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TABLE 5-120 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/5/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
5	1514	3.216	897	1769	2.919	865	1656	1734	892	600	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.200	1.416	8.401	13.645	OUTER NOZZLE LIP					
		RADIAL	.		.		.					
2511			0.230		.		0.05		.	.	.	
2512			↓		.		↓		.	.	.	
2513			0.643		.		0.76		.	.	.	
2514			↓		.		↓		.	.	.	
2515			1.082		.		1.52		.	.	.	
2516			↓		.		↓		.	.	.	
2517			1.521		.		2.27		.	.	.	RADIAL TRAVRS. NEAR EXIT
2518			↓		.		↓		.	.	.	
2519			1.960		.		3.03		.	.	.	
2520			↓		.		↓		.	.	.	
2521			2.399		.		3.78		.	.	.	
2522			↓		.		↓		.	.	.	
2523			2.838		.		4.54		.	.	.	
2524			↓		.		↓		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-121 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/5/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	$\overset{o}{h}$, in.
5	1514	3.214	897	1749	2.919	865	1656	1734	892	600	5.56	1.29

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Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
2525		RADIAL	3.277	/	.	13.645	5.30	/	.	.	.	
2526		↓	↓		.	↓	↓		.	.	.	
2527			3.716		.		6.05		.	.	.	RADIAL TRAVRS. NEAR EXIT
2528			↓		.		↓		.	.	.	
2529			4.155		.		6.81		.	.	.	
2530		↓	↓		.	↓	↓		.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-122 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/9/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
5	1514	3.214	897	1749	2.919	865	1656	1734	892	400	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.200	1.392	5.676	13.270	OUTER NOZZLE LIP					
		SLANT AX										
							·			·	·	
2559			·		5.276		·			·	·	
2560			·		↓		·			·	·	
2561			·		5.459		·			·	·	SLANT AX. TRAVRS. ALONG
2562			·				·			·	·	CENTER-LINE OF OUTER STREAM
	2564		0.230				0.05			1434	96	AND ALONG OUTER NOZZLE
	2565		0.422				0.38			1526	113	LIP-LINE.
	2566		0.643				0.76			1187	236	
	2567		0.865				1.14			995	229	
	2568		1.082				1.52			1001	212	HISTO. MEASURED ALONG
	2569		1.082				↓			1018	204	OUTER NOZZLE LIP-LINE.
	2550		1.304				1.90			1073	242	
	2551		1.521				2.27			958	204	
	2552		1.743				2.66			1130	241	
	2553		1.960				3.03			1294	226	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-123 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/9/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
5	1514	3.214	897	1749	2.919	865	1656	1734	892	400	5.56	1.29

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	2554	SLANT AX	2.182		5.459	13.270	3.41			1383	205	
	2555		2.399				3.78			1474	165	
	2556		2.621				4.17			1503	120	
	2557		2.838				4.54			1531	116	
	2558		3.060				4.92			1557	98	HISTO. MEASURED SLANT
	2559		3.277				5.30			1583	92	AXIALLY ALONG OUTER
	2560		3.499				5.68			1567	99	NOZZLE LIP LINE.
	2561		3.716				6.05			1542	103	
	2562		3.938				6.43			1558	104	
	2563		4.155				6.81			1548	105	
	2564		4.377				7.19			1527	101	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-124 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/12/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
6	619	3.302	1689	2439	3.119	871	1705	2289	1523	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h'	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF		1.578	6.854	13.638	PLUG TIP					
		AX						.				
3016				.				.	0.0	.	.	AX. TRAVRS. ON $r/D_{eq}=0$
3017				.				.		.	.	
3018				.	7.248			.	0.25	.	.	AX. TRAVRS. ON $r/D_{eq}=0.25$
3019				.				.		.	.	
3020				.	7.642			.	0.5	.	.	AX. TRAVRS. ON $r/D_{eq}=0.5$
3021				.				.		.	.	
	3001			2.314				9.96		1309	295	
	3002			2.234				8.88		1416	312	
	3003			2.154				7.79		1472	340	
	3004			2.074				6.71		1595	330	TURB. HISTO. MEASURED
	3005			1.994				5.63		1662	317	AXIALLY ON $r/D_{eq}=0.5$
	3006			1.914				4.55		1754	333	
	3007			1.874				4.01		1807	305	
	3008			1.874				4.01		1827	296	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-125 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/12/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
6	619	3.302	1689	2439	3.119	871	1705	2289	1523	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h°	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	3009	AX		1.834	7.642	13.638		3.46	0.5	1837	318	
	3010			1.794				2.92		1880	297	
	3011			1.754				2.38		1833	319	
	3012			1.714				1.84		1929	270	TURB. HISTO. MEASURED
	3013			1.674				1.30		1827	292	AXIALLY ON R/Deq=0.5.
	3014			1.634				0.76		1961	253	
	3015			1.594				0.22		1836	248	
	3016			1.554				-0.32		1992	227	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-12.6 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/12/82

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MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h^o, in.
6	620	3.317	1710	2459	2.145	868	1707	2304	1538	600	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.200	1.578	6.905	13.694	PLUG TIP					
3010		AX	.	.	7.893		.	.	0.5	.	.	AX. TRAVRS. ON R/D_{eq} = 0.5.
3011		↓	.	.	↓		.	.	↓	.	.	
3012		SLANT AX	.	.	.		.	.	.	.	.	SLANT AX. TRAVRS. ALONG OUTER
3013		↓	.	.	.	↓	.	.	.	.	.	NOZZLE LIP-LINE.

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-127 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/12/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
6	649	3.335	1687	2646	1.797	1348	1585	2356	1652	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	-	1.581	6.826	13.619	PLUG TIP					
3022		AX		.	↓	↓		.	0.00	.	.	AX. TRAVRS. ON r/D_{eq} = 0,
3023				.	↓			.	↓	.	.	0.25 AND 0.5, RESPECTIVELY.
3024				.	7.220			.	0.25	.	.	
3025				.	↓			.	↓	.	.	
3026				.	7.614			.	0.50	.	.	
3027				.				.		.	.	
	3017			1.575				-0.08		2050	207	
	3018			1.655				1.00		1961	227	
	3019			1.735				2.06		1956	262	TURBULENCE HISTO. MEASURED
	3020			1.815				3.17		1929	289	AXIALLY ON r/D_{eq} = 0.5.
	3021			1.895				4.25		1841	300	
	3022			1.975				5.33		1780	319	
	3023			2.055				6.41		1678	322	
	3024			2.131				7.44		1572	305	
	3025	↓		1.855	↓	↓		3.71	↓	1918	288	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-128 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/12/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
6	649	3.335	1687	2466	1.797	1348	1585	2356	1652	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
	3026	AX	·	1.775	7.614	13.619	·	2.625	0.50	1923	279	HISTO. MEASURED AXIALLY
	3027	↓	·	1.692	↓	↓	·	1.502	↓	1999	246	ON r/Deq = 0.5.
	3028	↓	·	1.612	↓	↓	·	0.419	↓	2016	202	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-129 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/11/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
6	1619	3.397	871	1757	3.122	864	1698	1748	870	0	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Position (Volts) Axial	Position (Volts) EW	Position (Volts) NS	Slant Ax. Pos. X^i/h^o	Axial Posit. x/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.200	1.553	6.747	13.600	PLUG TIP					
3000		AX	.	.	↓	↓	.	.	0.00	.	.	
3001		↓	.	.	↓	↓	.	.	↓	.	.	AX. TRAVRS. ON $r/D_{eq}=0$
3002		↓	.	.	7.535	↓	.	.	0.50	.	.	AND O.S., RESPECTIVELY.
3003		↓	.	.	↓	↓	.	.	↓	.	.	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-130 AERODYNAMIC TEST RESULTS BY LASER DOPPLER VELOCIMETER TEST DATE 11/11/82

MODEL	TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R	V_j^i, ft/s	V_j^{mix} ft/s	T_T^{mix} °R	$V_{a/c}$, ft/s	D_{eq}, in.	h^o, in.
6	1620	3.612	875	1764	3.130	867	1703	1754	874	400	5.23	0.62

Graph No.	Histo No.	Type of Traverse	Position (Volts) Slant Axial	Axial	EW	NS	Slant Ax. Pos. X'/h^o	Axial Posit. X/D_{eq}	Radial Posit. R/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
		REF	0.200	1.552	6.745	13.624	PLUG TIP					
3004		AX		·	↓	↓		·	0.00	·	·	
3005		↓		·	↓			·	↓	·	·	AX. TRAVRS. ON R/Deq = 0
3006				·	7.533			·	0.50	·	·	AND 0.5, RESPECTIVELY.
3007		↓		·	↓	↓		·	↓	·	·	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

5.2.3 LV Mean Velocity Traces

5.2.3.1 Mean Velocity Traces of DFSC-1

DATE: 9/17/82 | NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 119

PLOT IDENTIFICATION : G - 903

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

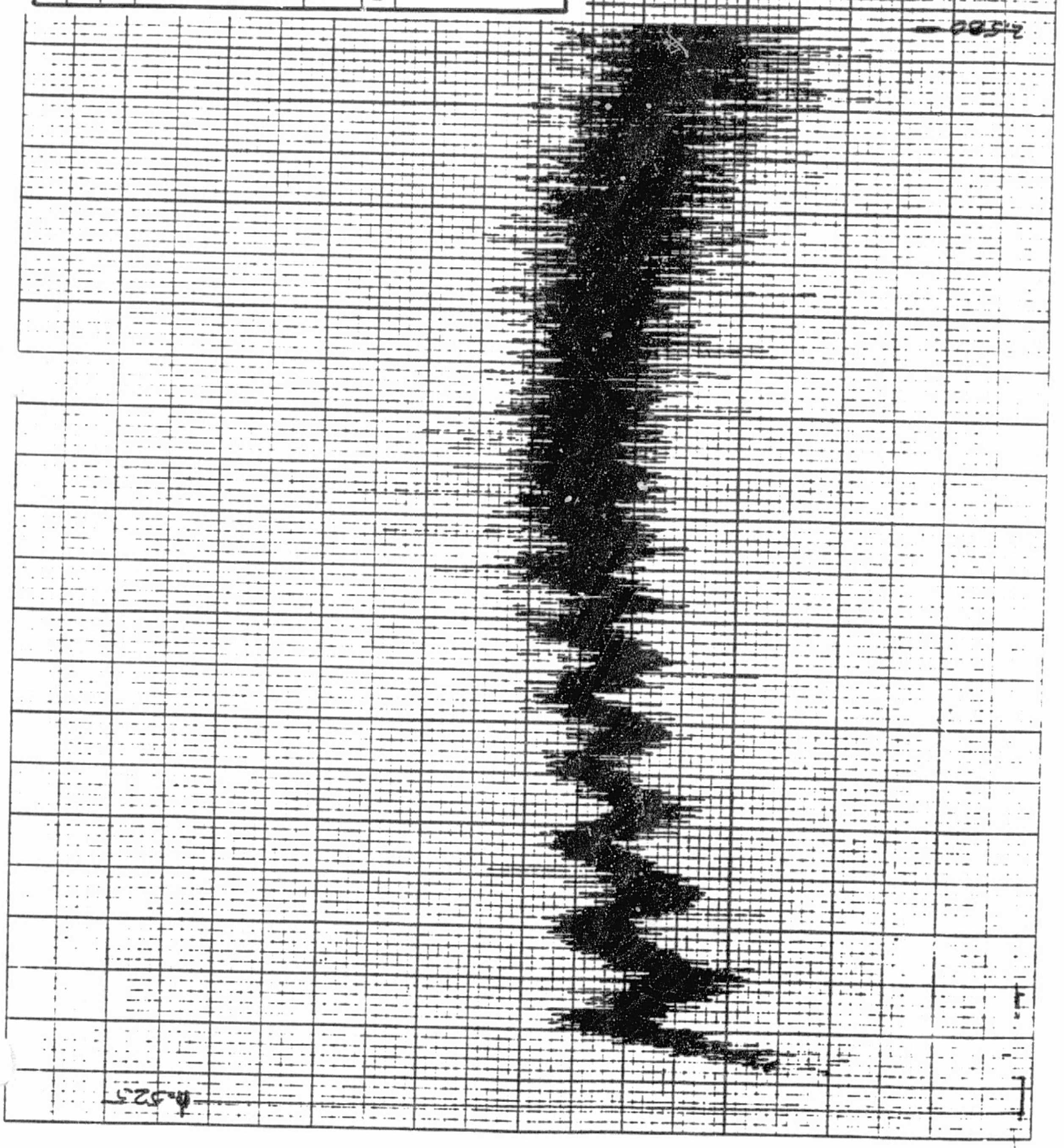
RADIAL LOCATIONS: REF. (℄) - 6.945 VOLTS) $\frac{R}{R_2}$ =
TRAVERSE - 6.945 VOLTS)

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - VOLTS) $\frac{X}{D_{eq}}$ =
TRAVERSE - VOLTS)

SCALE : X-AXIS= 7.1 INCH/UNIT
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
119	3.303	1704	2450	3.126	869
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1704	2297	1534	0	5.23	0.62

DATE: 9/17/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 119

PLOT IDENTIFICATION : G - 904

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄) - 6.945 VOLTS; TRAVERSE - 6.945 VOLTS; R/R_2 =

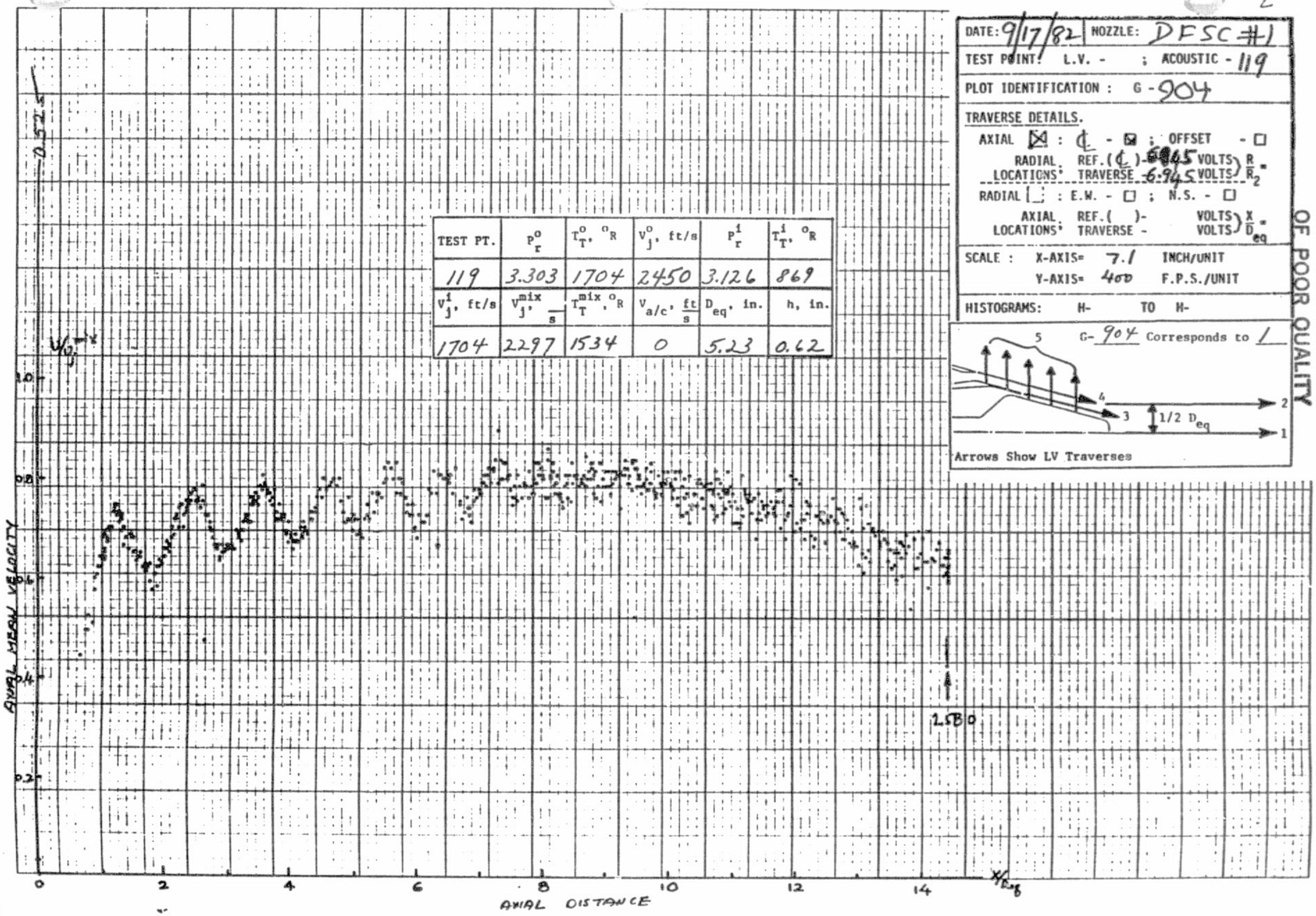
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( ) - VOLTS; TRAVERSE - VOLTS; X/D_{eq} =

SCALE : X-AXIS = 7.1 INCH/UNIT; Y-AXIS = 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G- 904 Corresponds to 1



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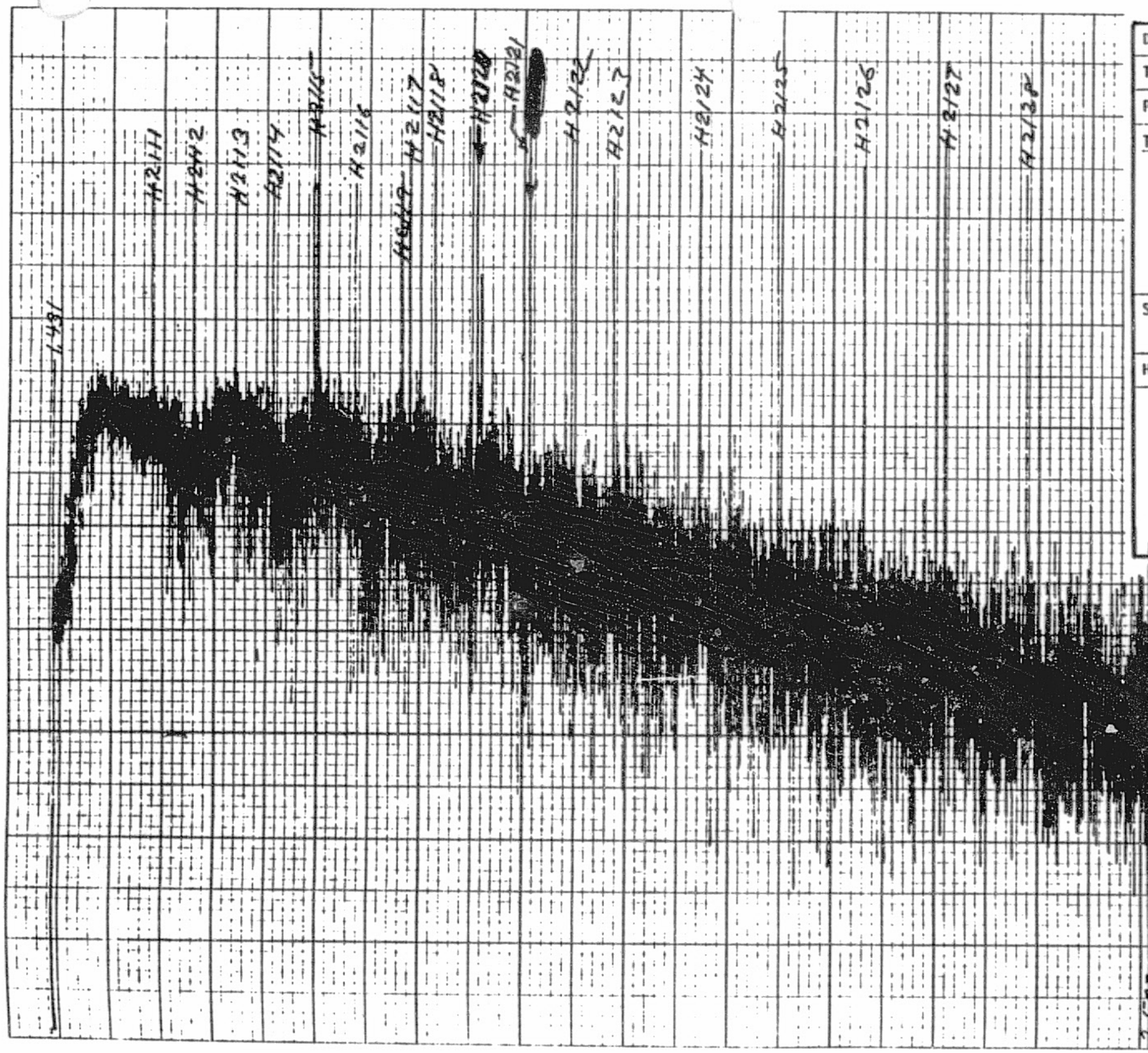

DATE: 9/17/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 119

PLOT IDENTIFICATION : G - 905

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄) - 6.945 VOLTS; TRAVERSE - 7.678 VOLTS; $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( ) - VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H-2111 TO H-2128

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NO. XY 1101

DATE: 9/17/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 119

PLOT IDENTIFICATION : G - 905A

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)-6.945 VOLTS; TRAVERSE -7.678 VOLTS $\frac{R}{R_2}$ =

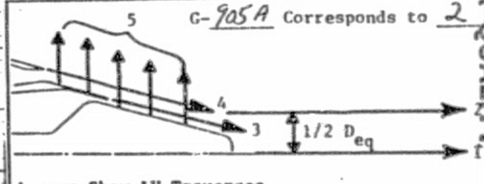
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS $\frac{X}{D_{eq}}$ =

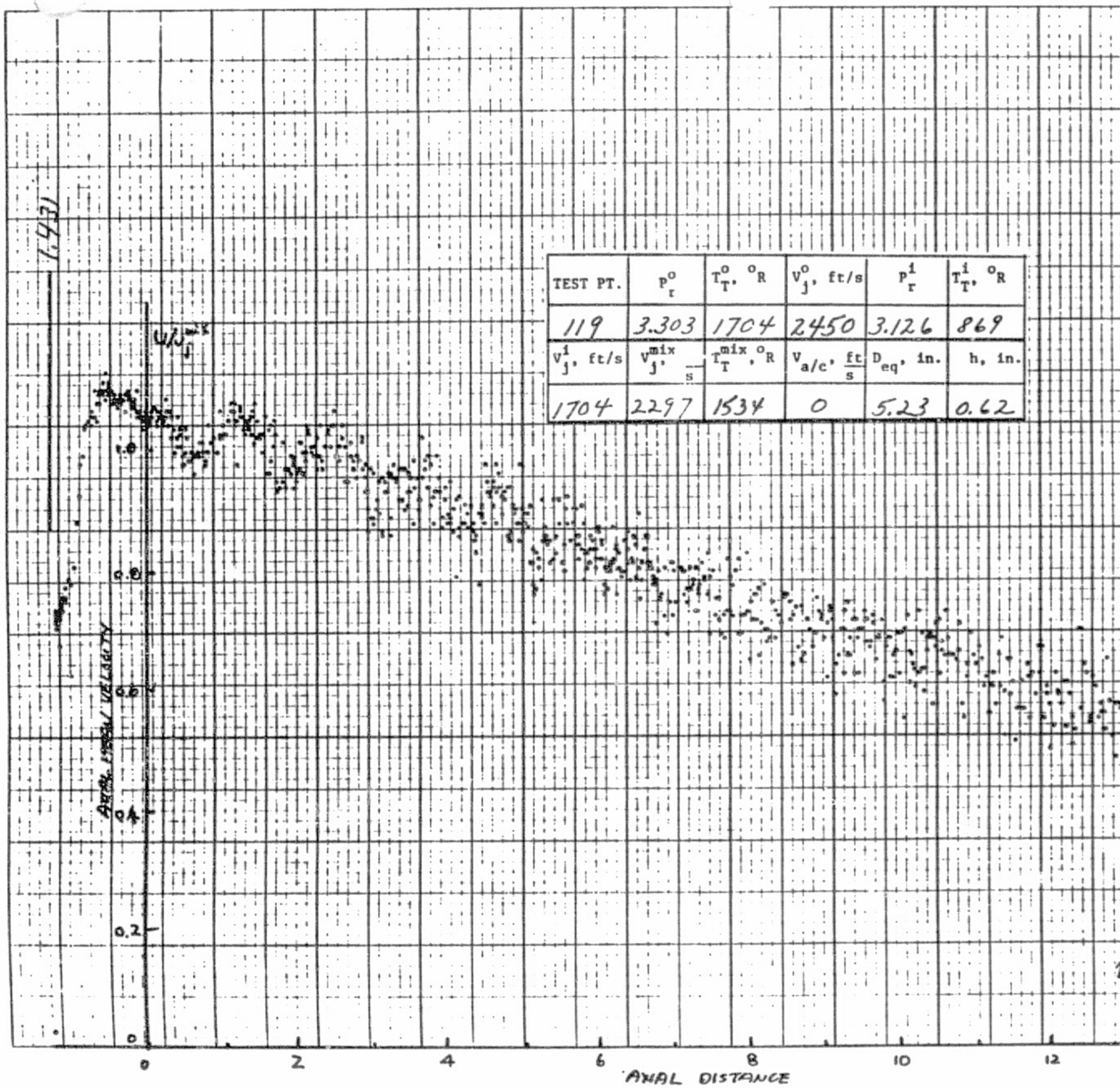
SCALE : X-AXIS= 7.1 INCH/UNIT; Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-905A Corresponds to 2



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
119	3.303	1704	2450	3.126	869
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1704	2297	1534	0	5.23	0.62



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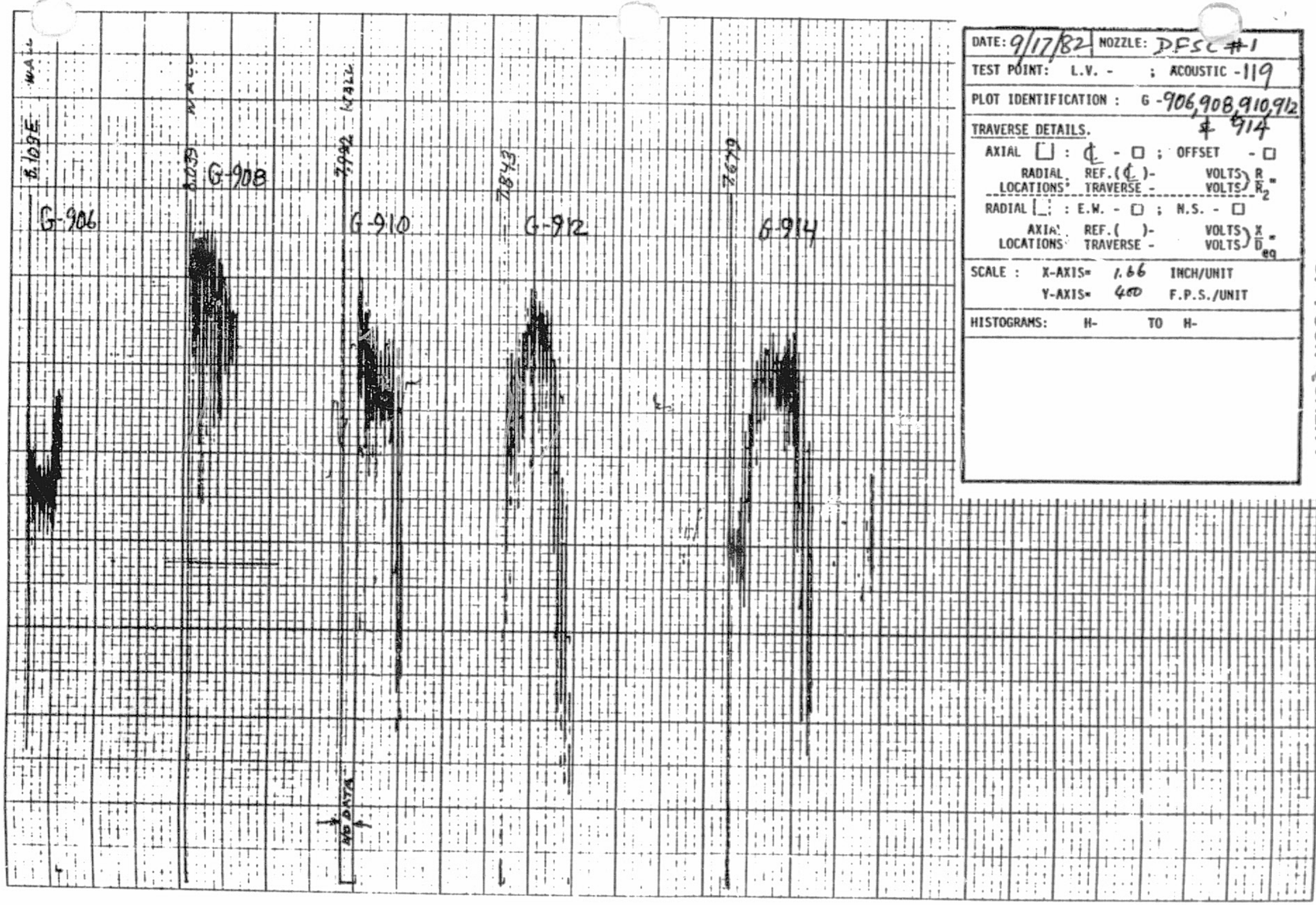


DATE: 9/17/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 119

PLOT IDENTIFICATION : G - 906, 908, 910, 912 & 914

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

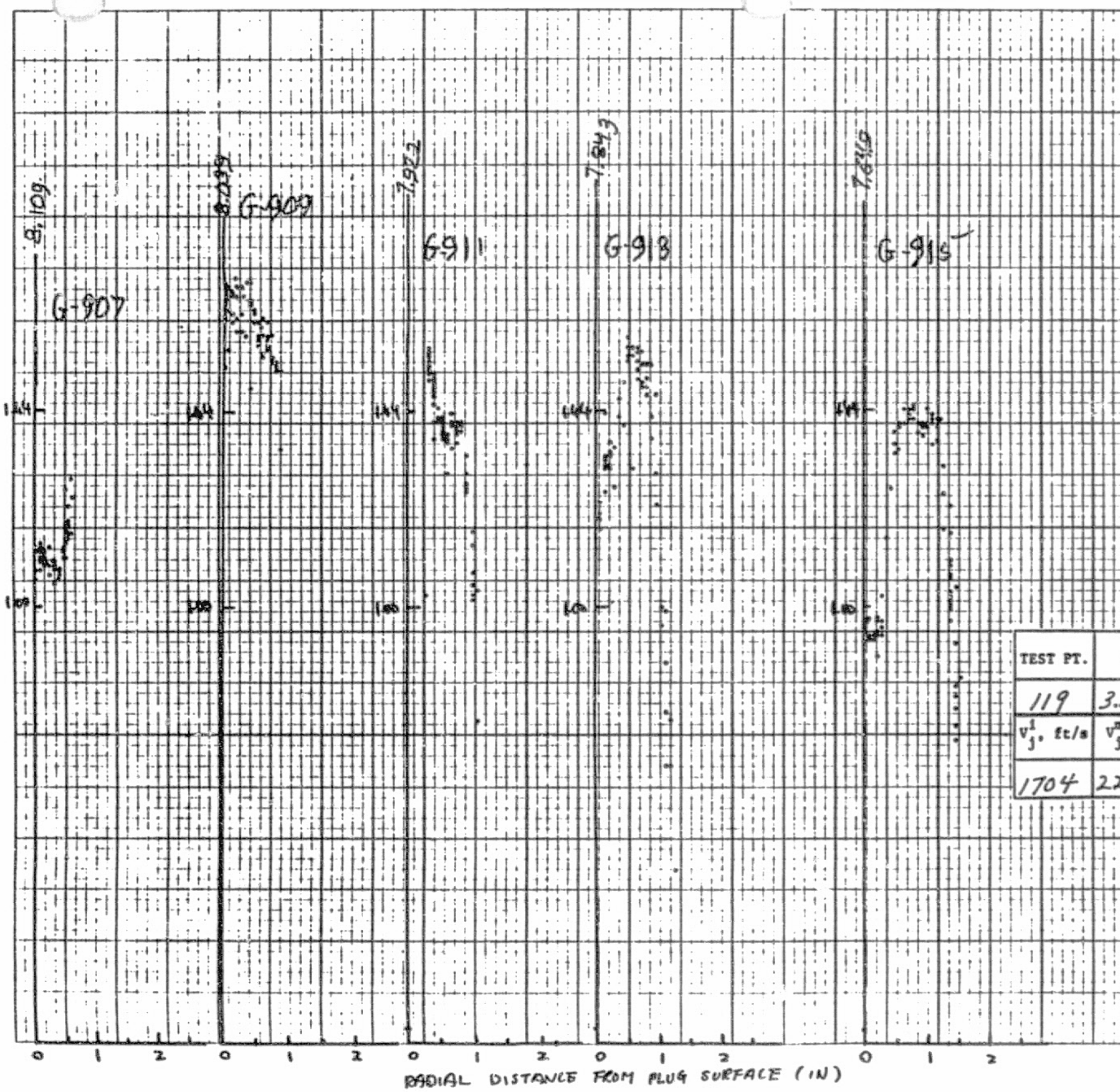
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

6



No. XY 1101

MACH NUMBER : M 279

DATE: 9/17/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 119	
PLOT IDENTIFICATION : G - 907, 909, 911, 913 & 915	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

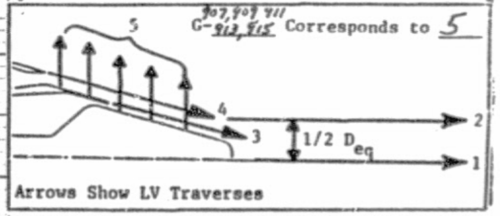
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: N- TO N-



TEST PT.	P_r^o	T_T^o, ^oR	V_j^o, ft/s	P_r^i	T_T^i, ^oR
119	3.303	1704	2450	3.126	869
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, ^oR	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1704	2297	1534	0	5.23	0.62

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DATE: 9/17/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 119

PLOT IDENTIFICATION : G - 916, 918, 920, 922, 924

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

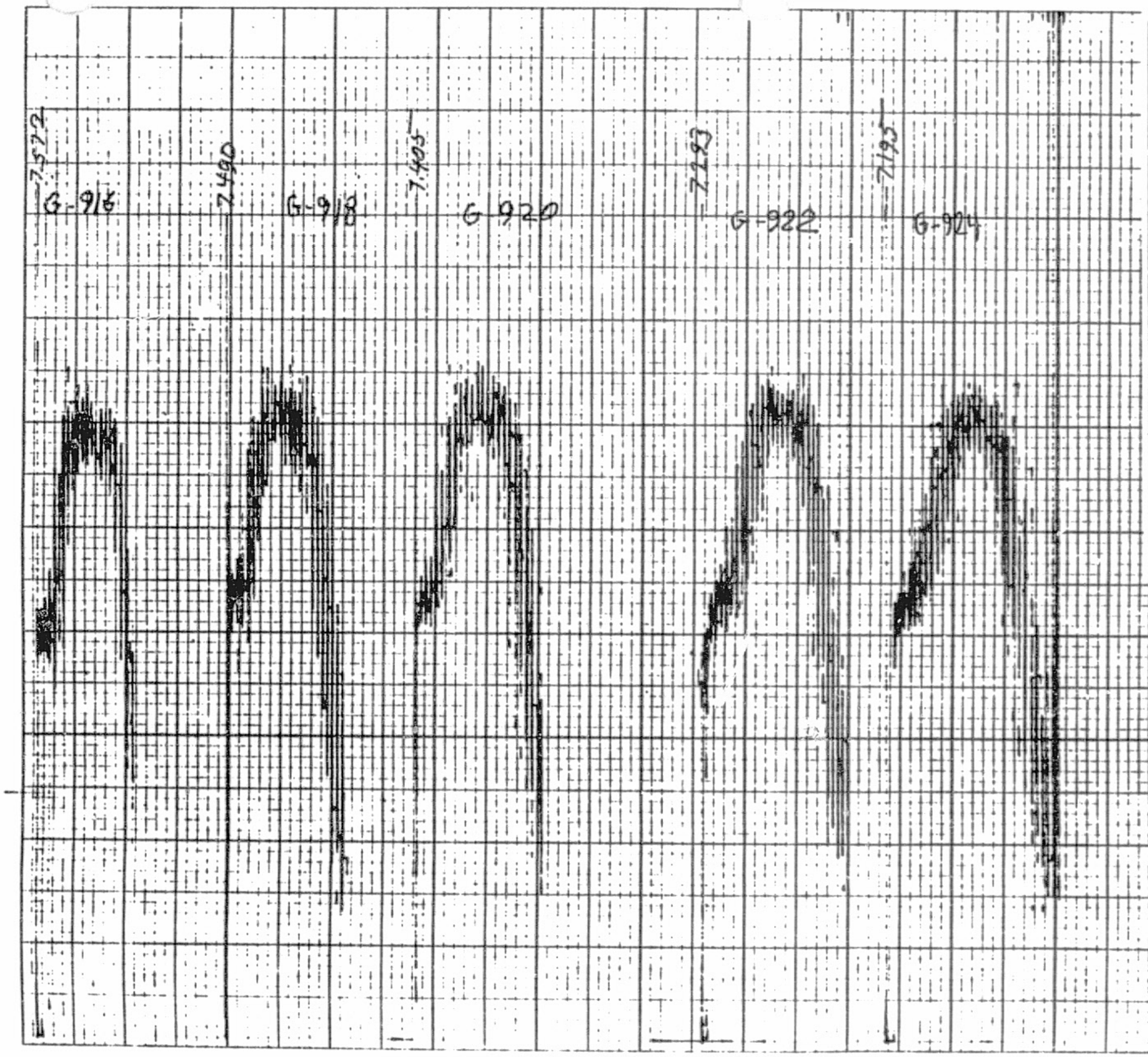
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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NO. XY 1101

DATE: 9/17/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 119

PLOT IDENTIFICATION : G-917, 919, 921, 923, 925

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS) R/R_2 =

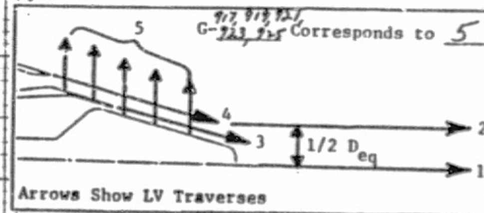
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

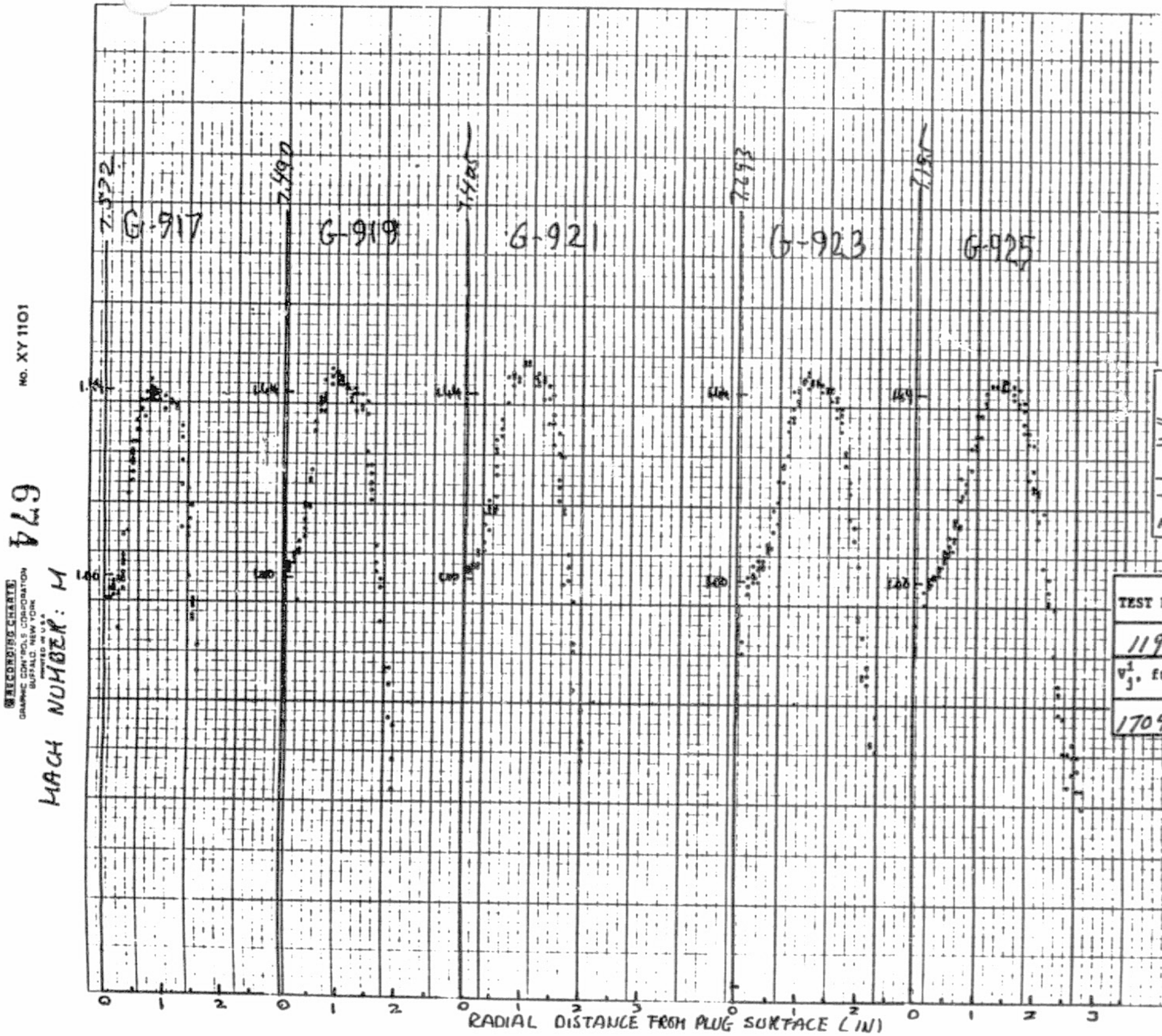
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
119	3.303	1704	2450	3.126	869

V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1704	2297	1534	0	5.23	0.62



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DATE: 9/17/82 | NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 119

PLOT IDENTIFICATION : G - 926

TRAVERSE DETAILS.

AXIAL [x] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

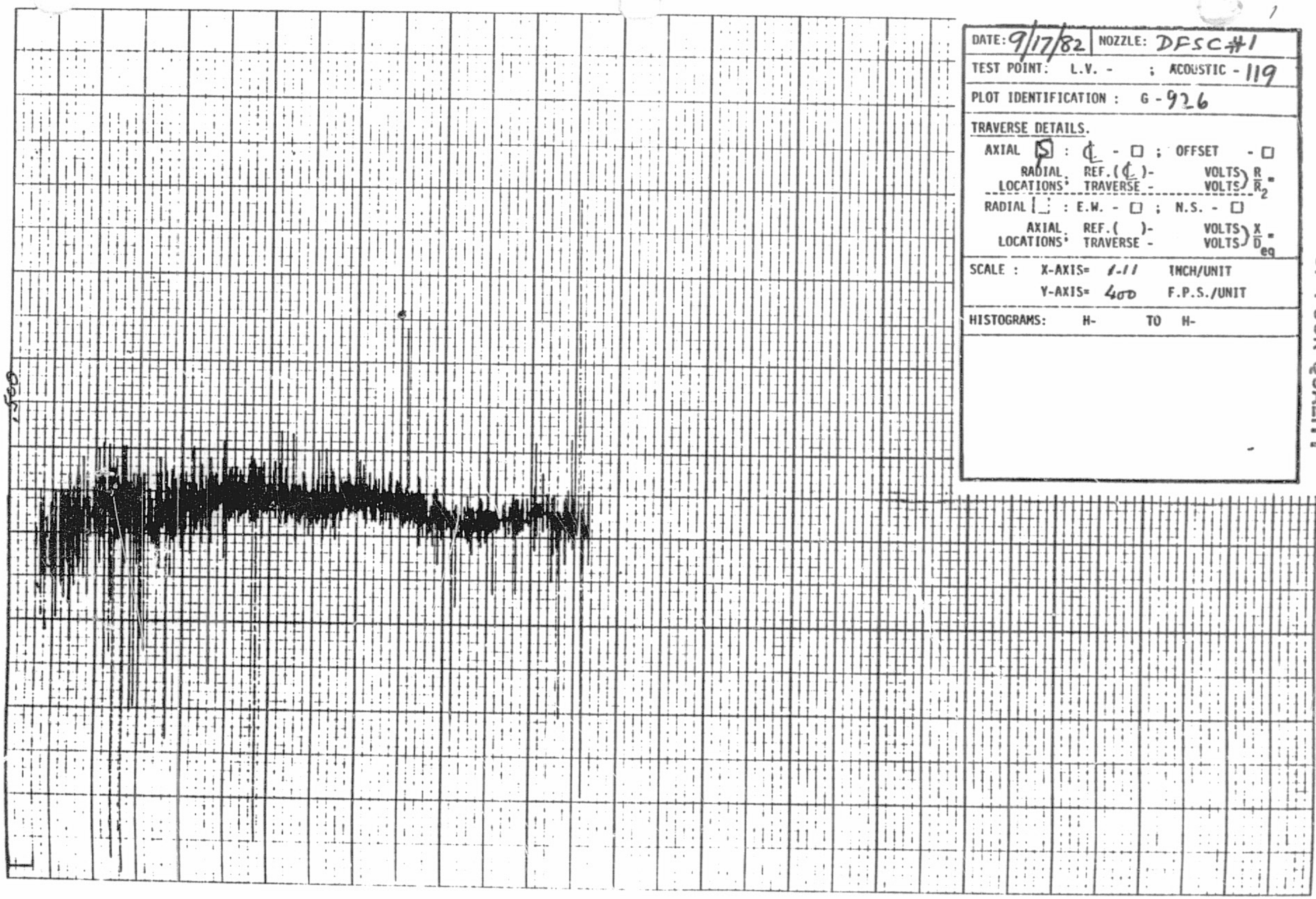
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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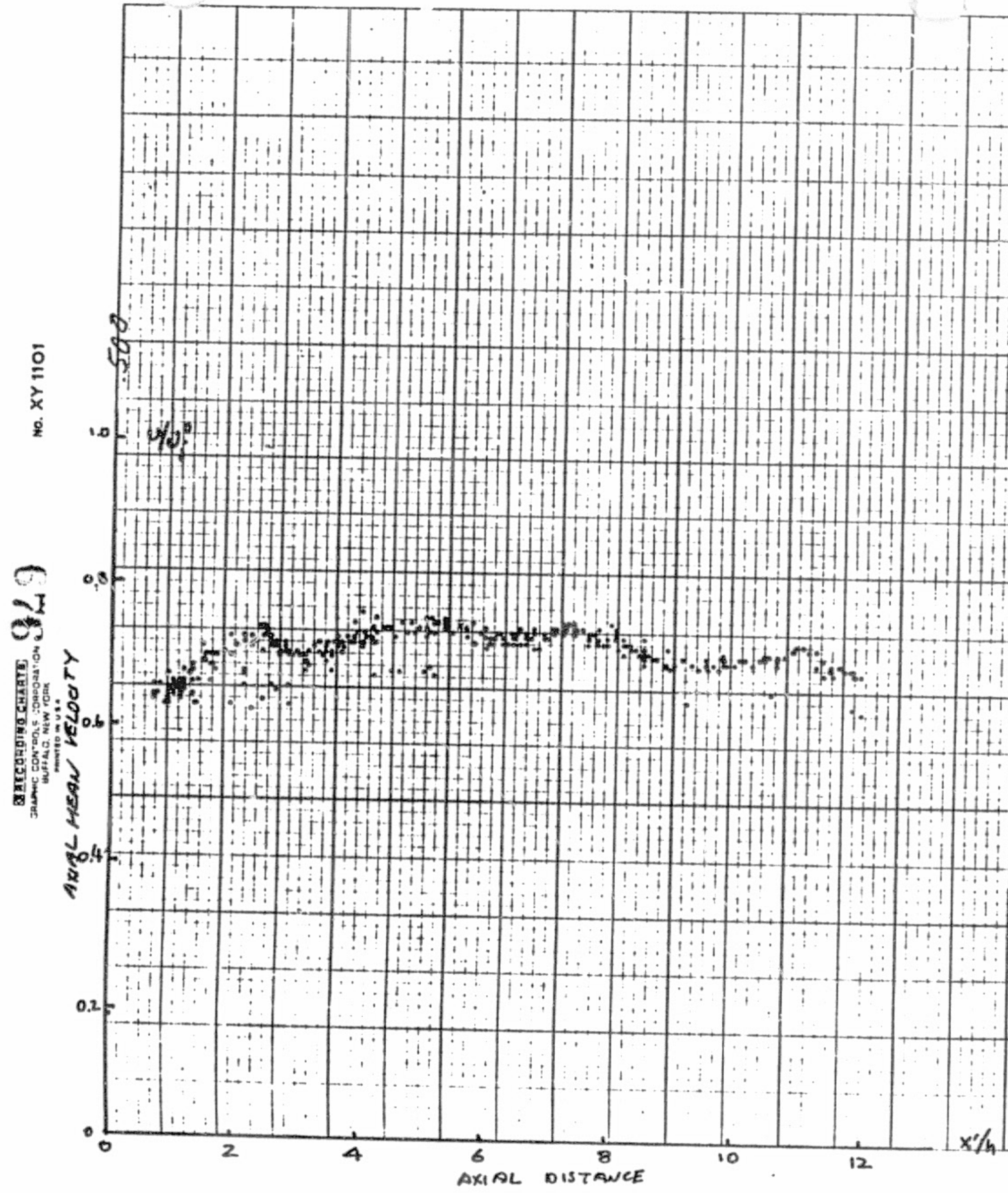


DATE: 9/17/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 119

PLOT IDENTIFICATION : G - 927

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS VOLTS } R/R_2 =

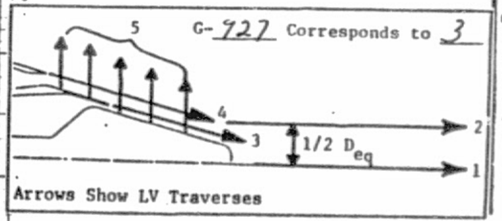
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS VOLTS } X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
119	3.303	1704	2450	3.126	869
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1704	2297	1534	0	5.23	0.62

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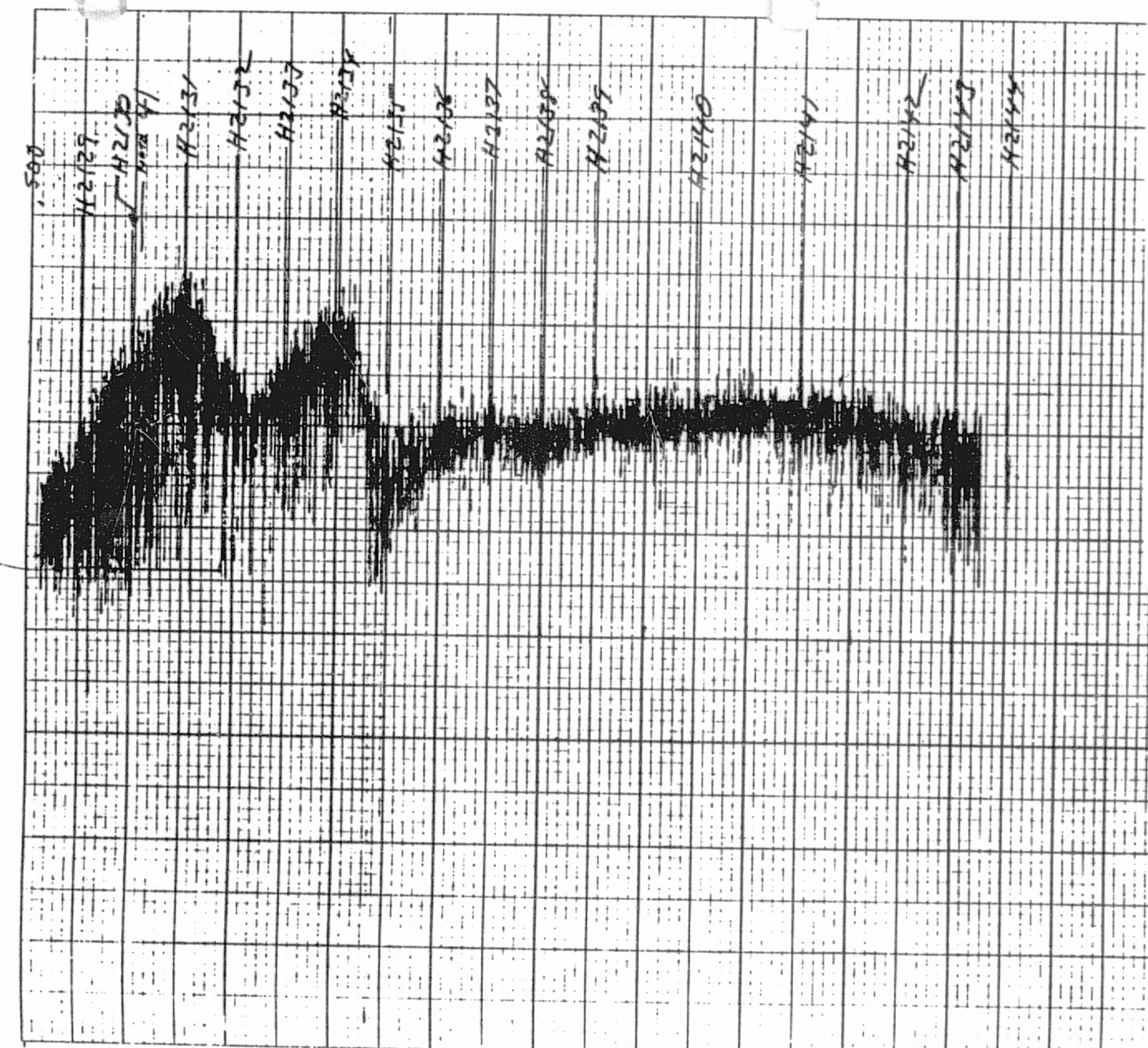

DATE: 9/17/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 119	
PLOT IDENTIFICATION : G-930	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 600 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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DATE 9/17/82	NOZZLE: DFSC#1
TEST POINT: L.V. - ; ACOUSTIC - 119	
PLOT IDENTIFICATION : G - 931	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

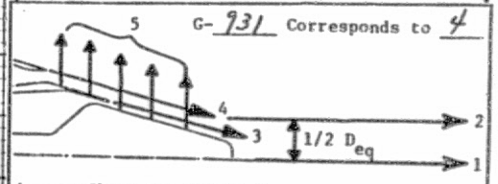
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

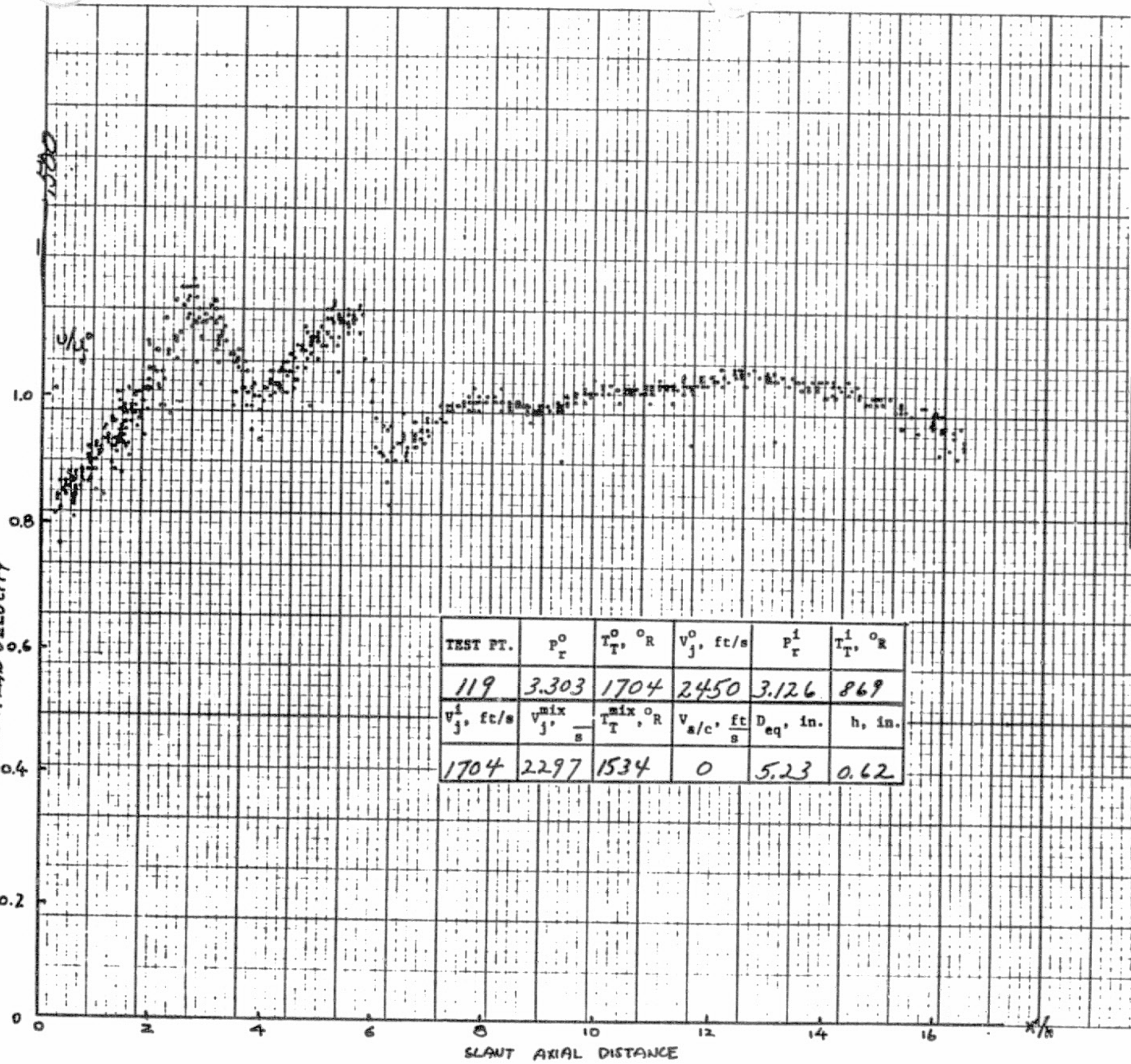
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-931 Corresponds to 4



Arrows Show LV Traverses



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
119	3.303	1704	2450	3.126	869
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1704	2297	1534	0	5.23	0.62

NO. XY 1101

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

678

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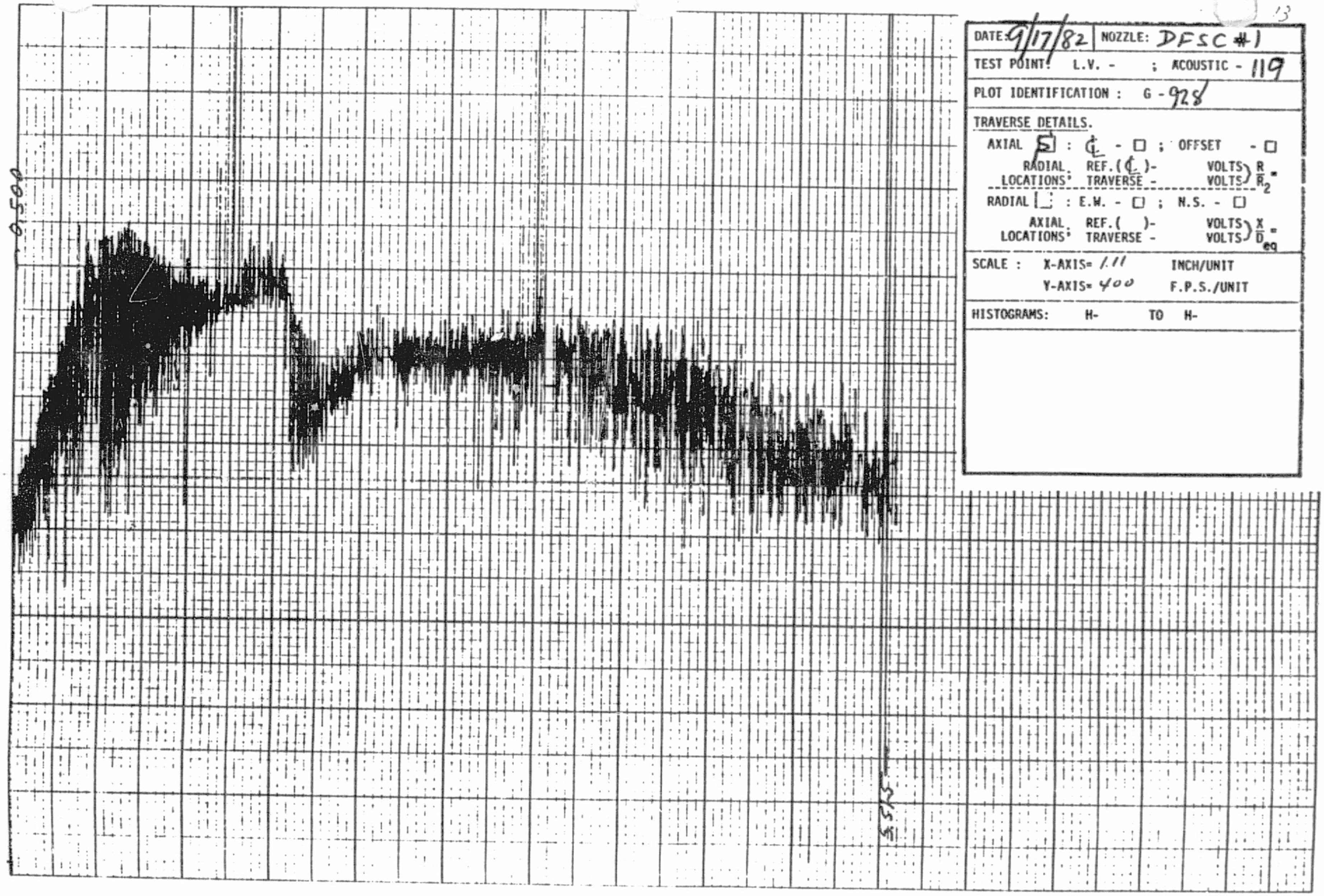
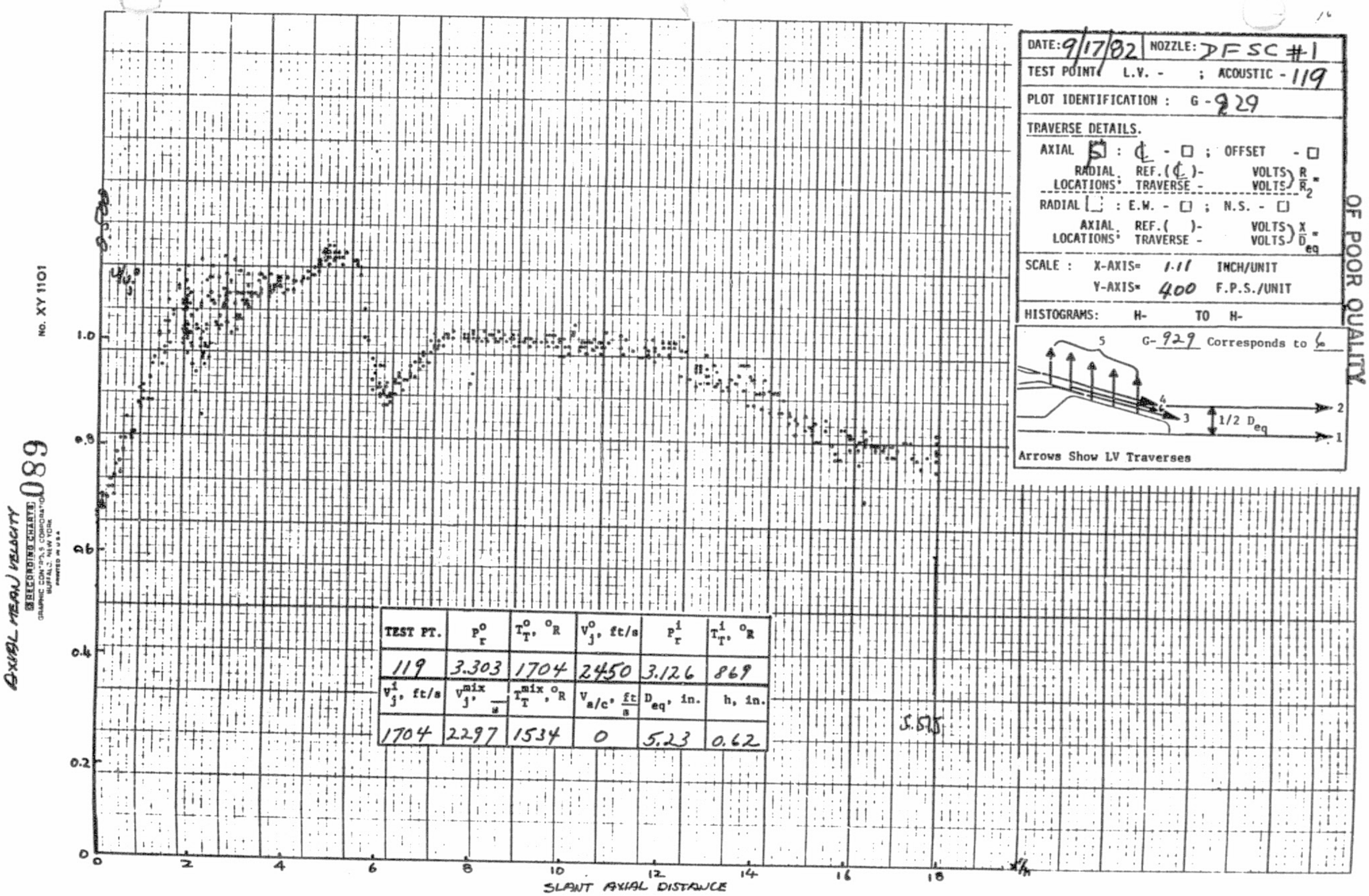


NO. XY 1101

679

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO NEW YORK PRINTED IN U.S.A.



NO. XY 1101

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK PRINTED IN U.S.A.

089

DATE: 9/17/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 119

PLOT IDENTIFICATION : G - 929

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
119	3.303	1704	2450	3.126	869
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1704	2297	1534	0	5.23	0.62

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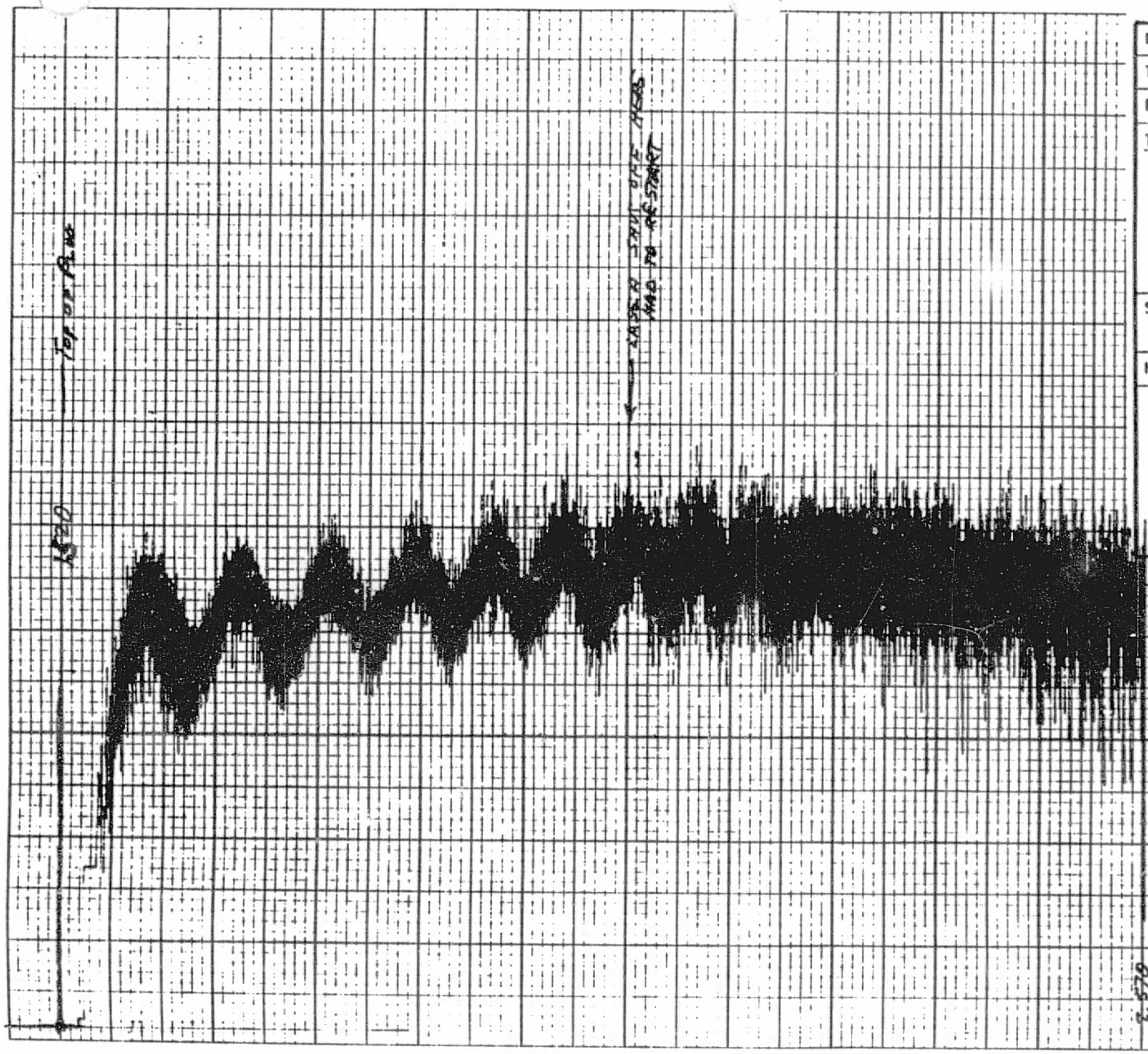

DATE: 9/16/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 120	
PLOT IDENTIFICATION : G - 875	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - 6.876 VOLTS; TRAVERSE - 6.876 VOLTS; $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS = 7.1 INCH/UNIT

Y-AXIS = 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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289

NO. XY 1101

DATE: 9/16/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 120

PLOT IDENTIFICATION : G - 876

TRAVERSE DETAILS.

AXIAL [X] : ℄ - [X] ; OFFSET - □

RADIAL LOCATIONS: REF.(℄)-6.876 VOLTS; TRAVERSE -6.876 VOLTS; $\frac{R}{R_2}$ =

RADIAL □ : E.W. - □ ; N.S. - □

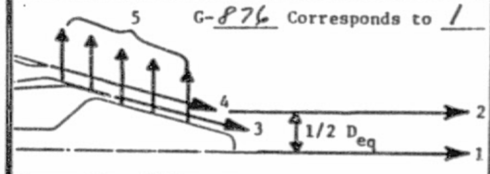
AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

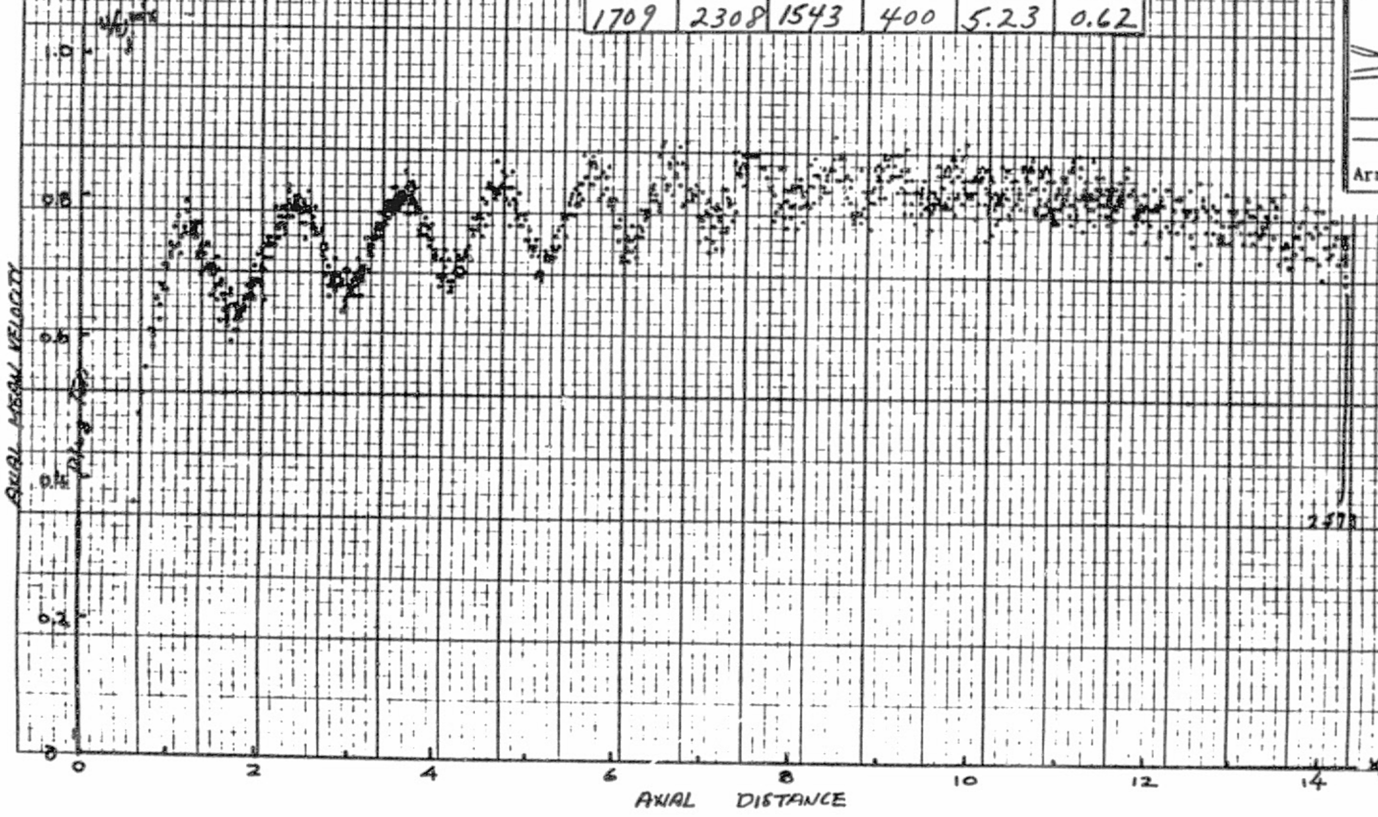
HISTOGRAMS: H- TO H-

G-876 Corresponds to 1



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
120	3.321	1713	2461	3.123	875
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1709	2308	1543	400	5.23	0.62



17

DATE: 9/16/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 120

PLOT IDENTIFICATION : G - 877

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄) - 6.876 VOLTS; TRAVERSE - 7.648 VOLTS; $\frac{R}{R_2}$ =

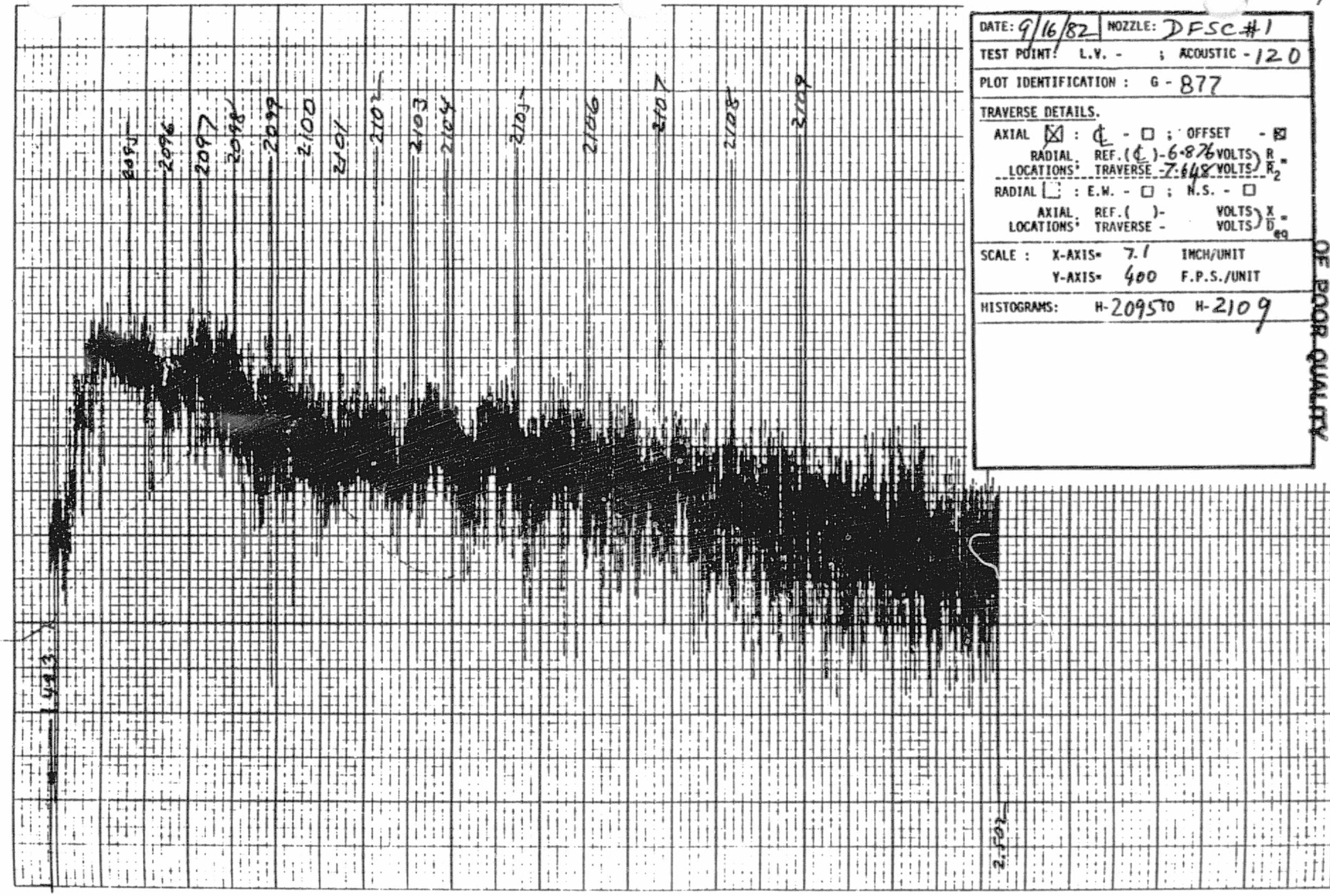
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS = 7.1 INCH/UNIT

Y-AXIS = 400 F.P.S./UNIT

HISTOGRAMS: H-2095 TO H-2109



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No. XY 1101

683

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DATE: 9/16/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 120	
PLOT IDENTIFICATION : G-878	

TRAVERSE DETAILS.

AXIAL [X] : ℄ - ☐ ; OFFSET - [X]

RADIAL LOCATIONS: REF. (℄) - 6.876 VOLTS; TRAVERSE - 7.648 VOLTS } R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

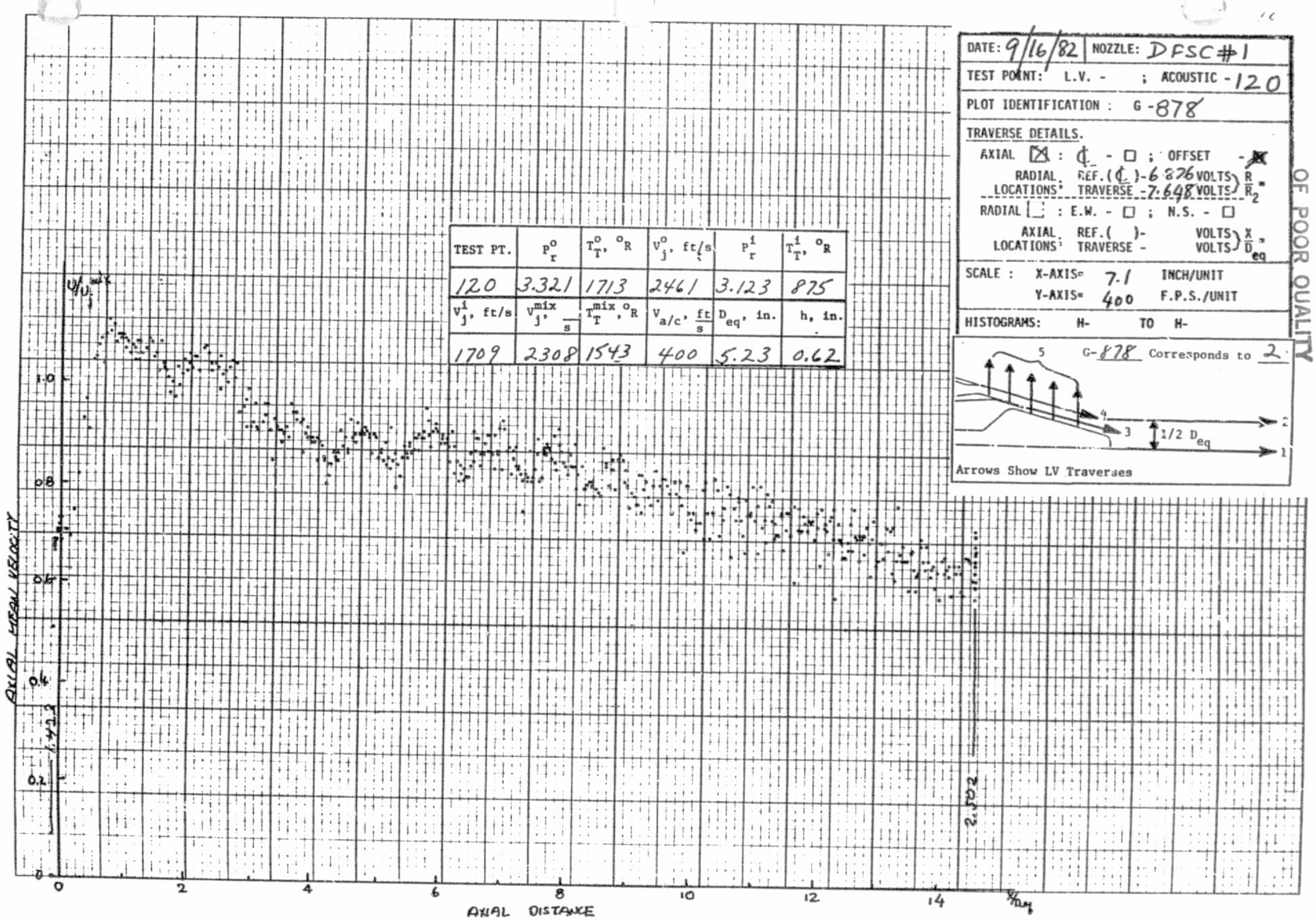
AXIAL LOCATIONS: REF. ( ) - VOLTS; TRAVERSE - VOLTS } X/D_{eq} =

SCALE : X-AXIS = 7.1 INCH/UNIT

Y-AXIS = 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
120	3.321	1713	2461	3.123	875
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1709	2308	1543	400	5.23	0.62



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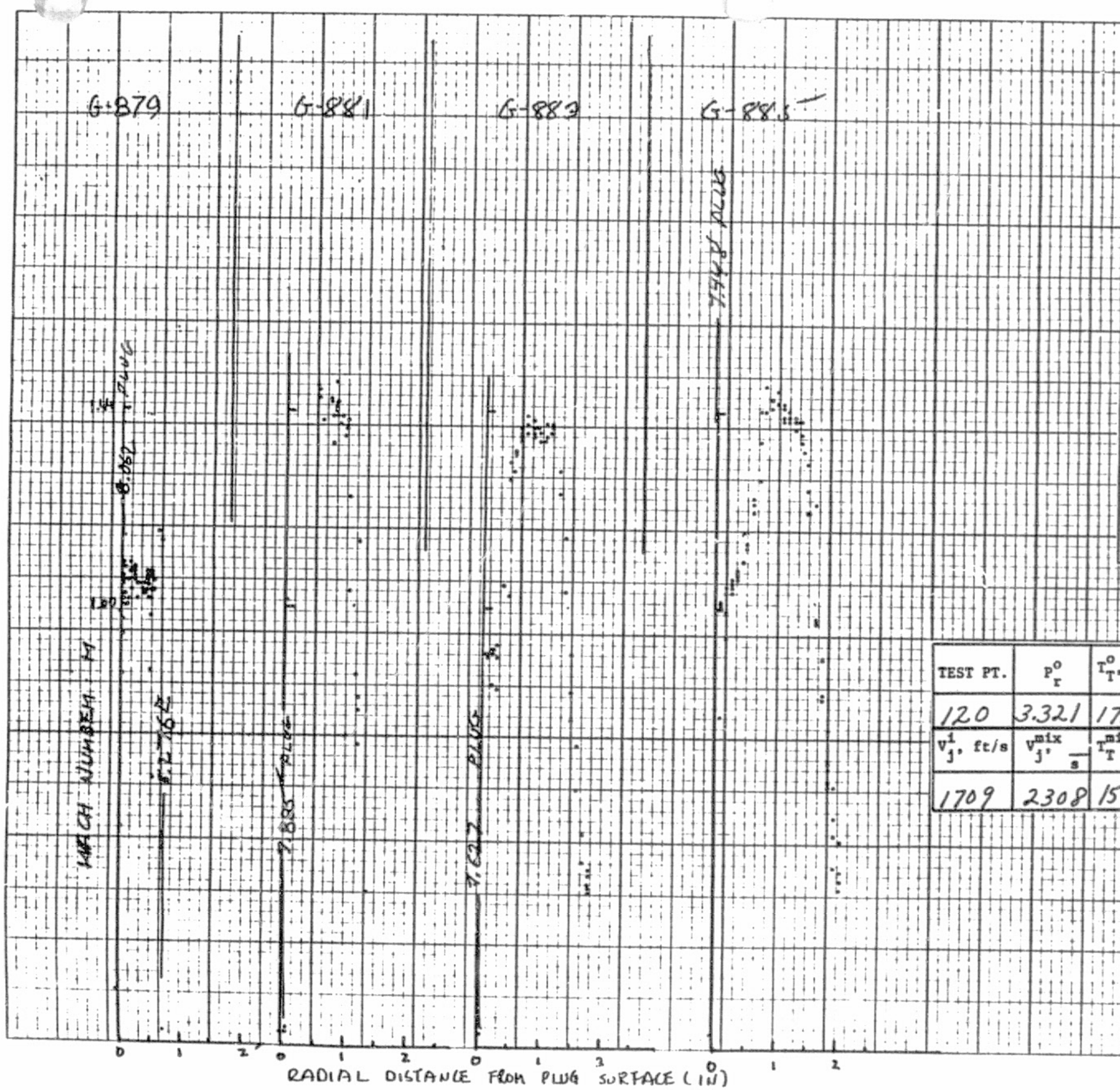
789



DATE: 9/16/82 NOZZLE: DFSC# 1

TEST POINT: L.V. - ; ACOUSTIC -120

PLOT IDENTIFICATION : G - 879, 881, 883 & 885

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

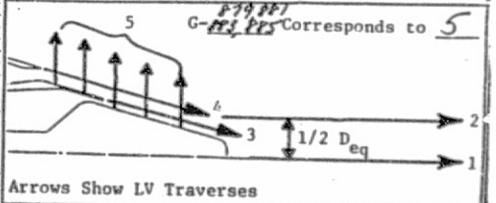
RADIAL LOCATIONS: REF. (℄)-TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

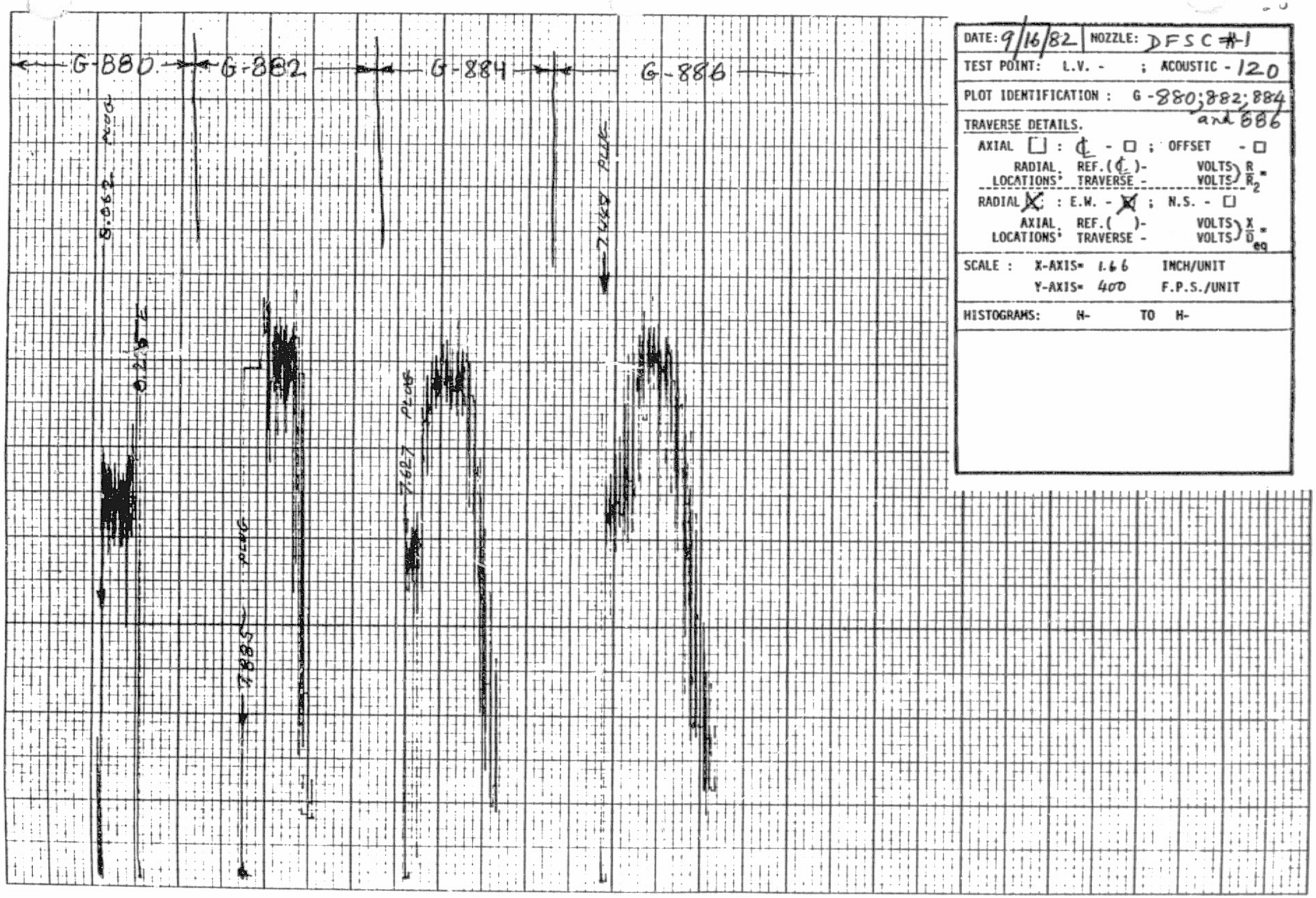
AXIAL LOCATIONS: REF. ( )-TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
120	3.321	1713	2461	3.123	875
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1709	2308	1543	400	5.23	0.62



DATE: 9/16/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ;	ACOUSTIC - 120

PLOT IDENTIFICATION : G-880; 882; 884 and 886

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

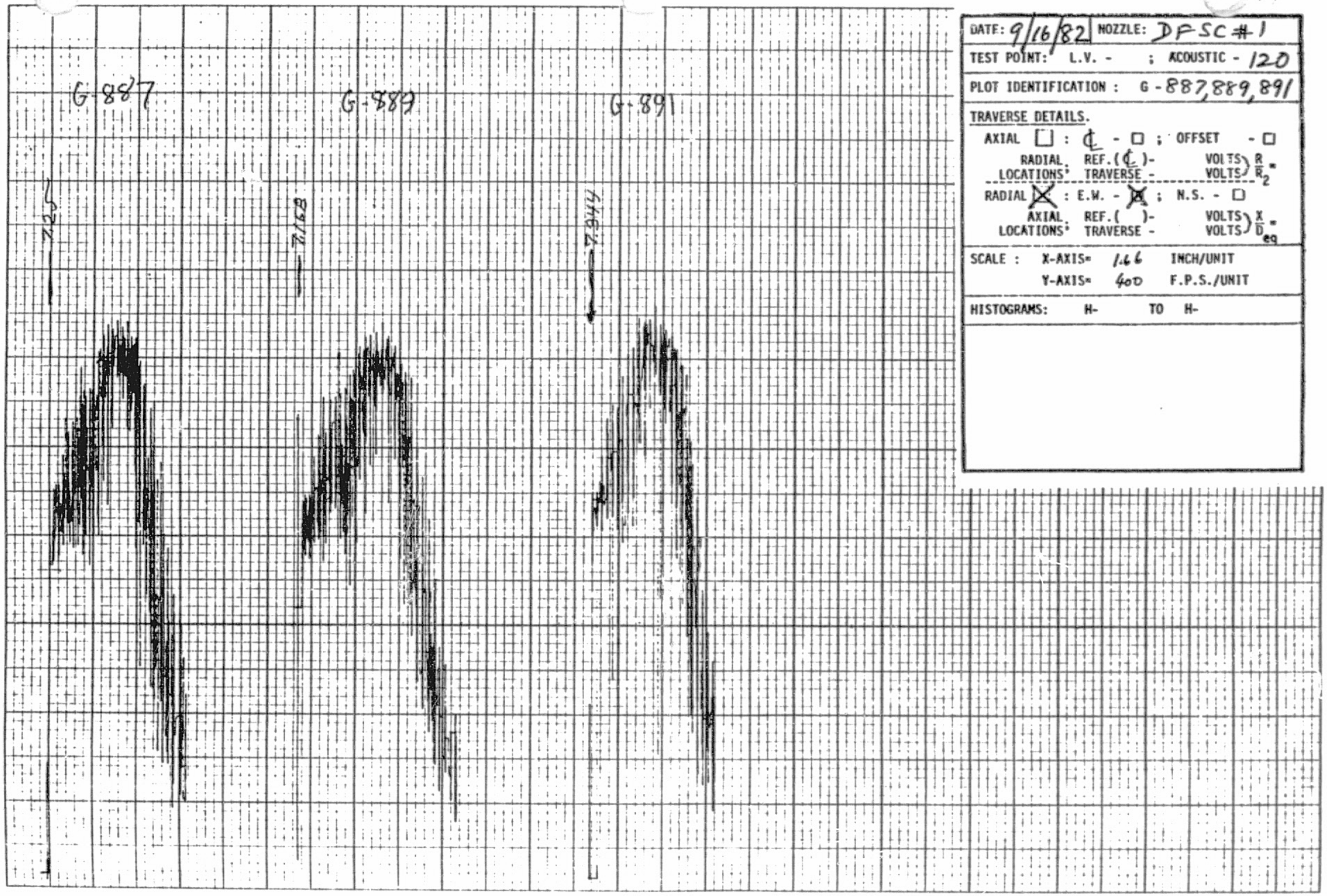
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



NO. XY 1101

687

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GRAPHIC CONTROLS CORPORATION
BUFFALO NEW YORK

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DATE: 9/16/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 120

PLOT IDENTIFICATION : G - 888, 890, 892

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

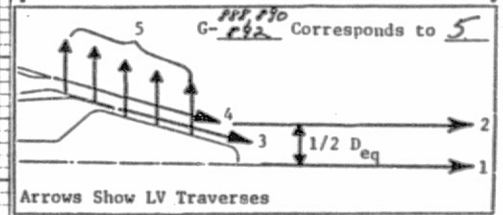
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

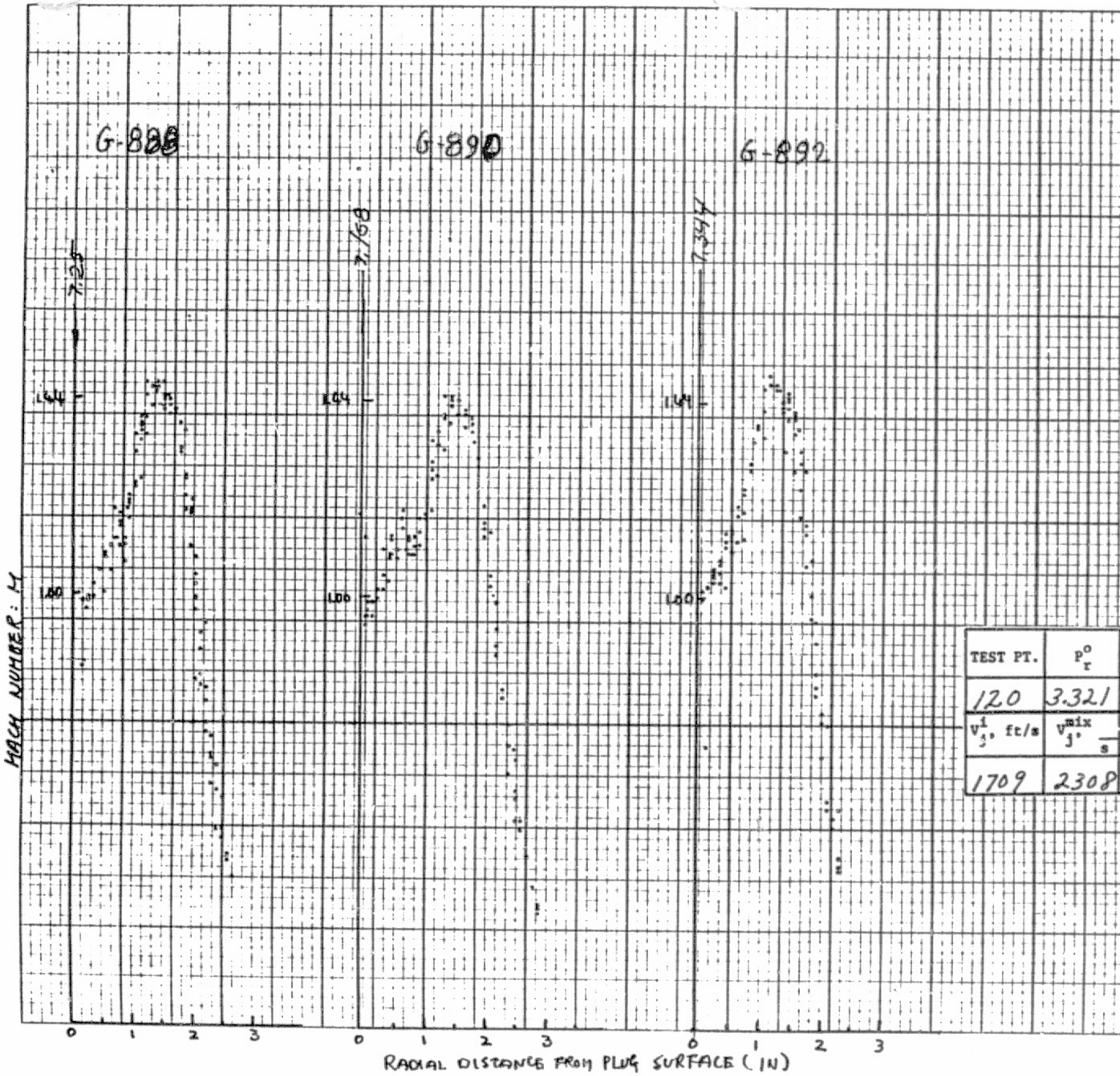
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-





TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
120	3.321	1713	2461	3.123	875
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1709	2308	1543	400	5.23	0.62

688

No. XY 1101

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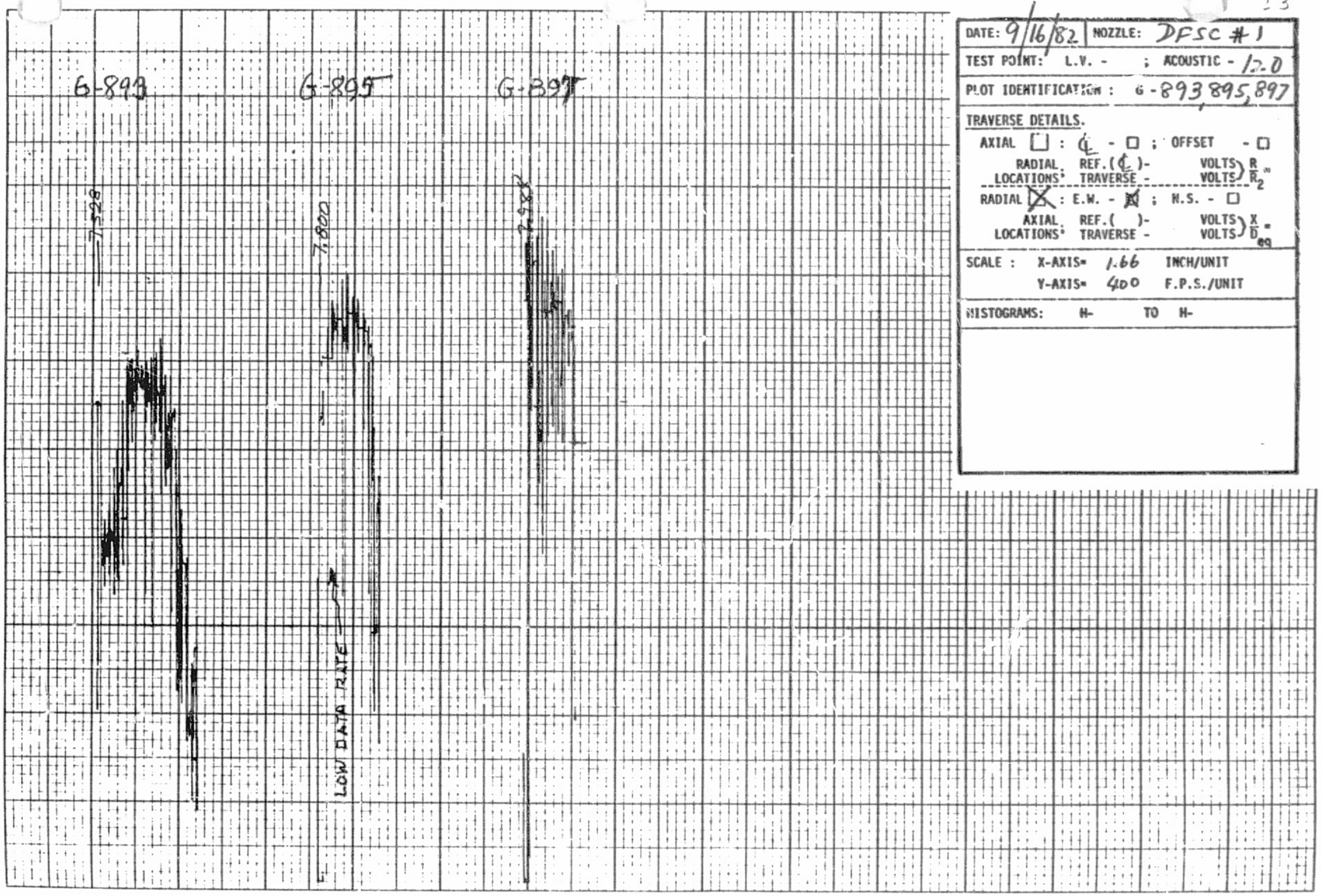

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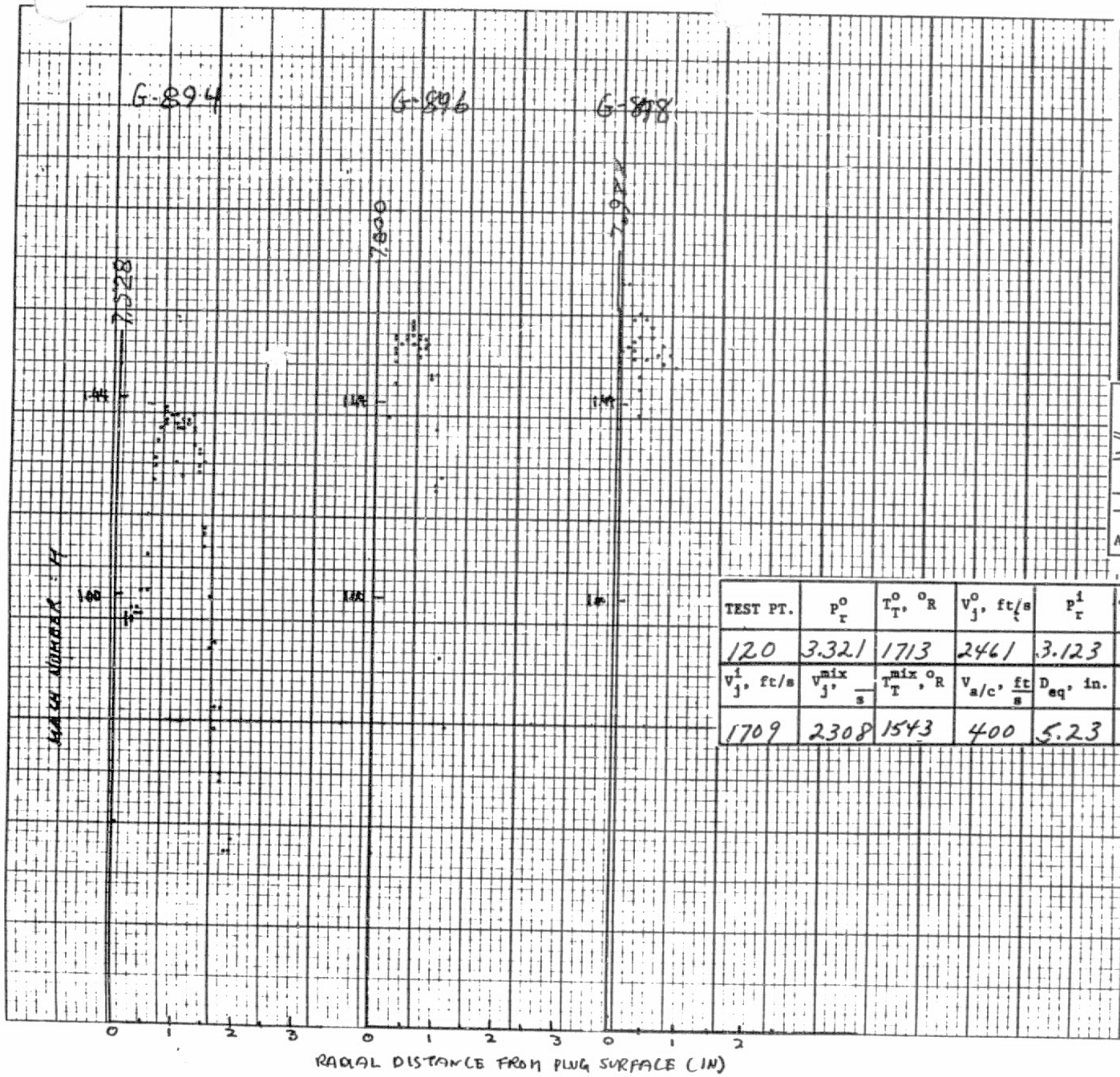


DATE: 9/16/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 120

PLOT IDENTIFICATION : G - 894,896,898

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

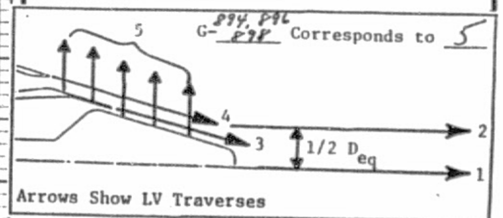
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
120	3.321	1713	2461	3.123	875
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1709	2308	1543	400	5.23	0.62

DATE: 9/16/82	NOZZLE: DFSC#1
TEST POINT: L.V. - ; ACOUSTIC - 120	
PLOT IDENTIFICATION : G-899	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- VOLTS; TRAVERSE - VOLTS $\frac{R}{R_2}$ =

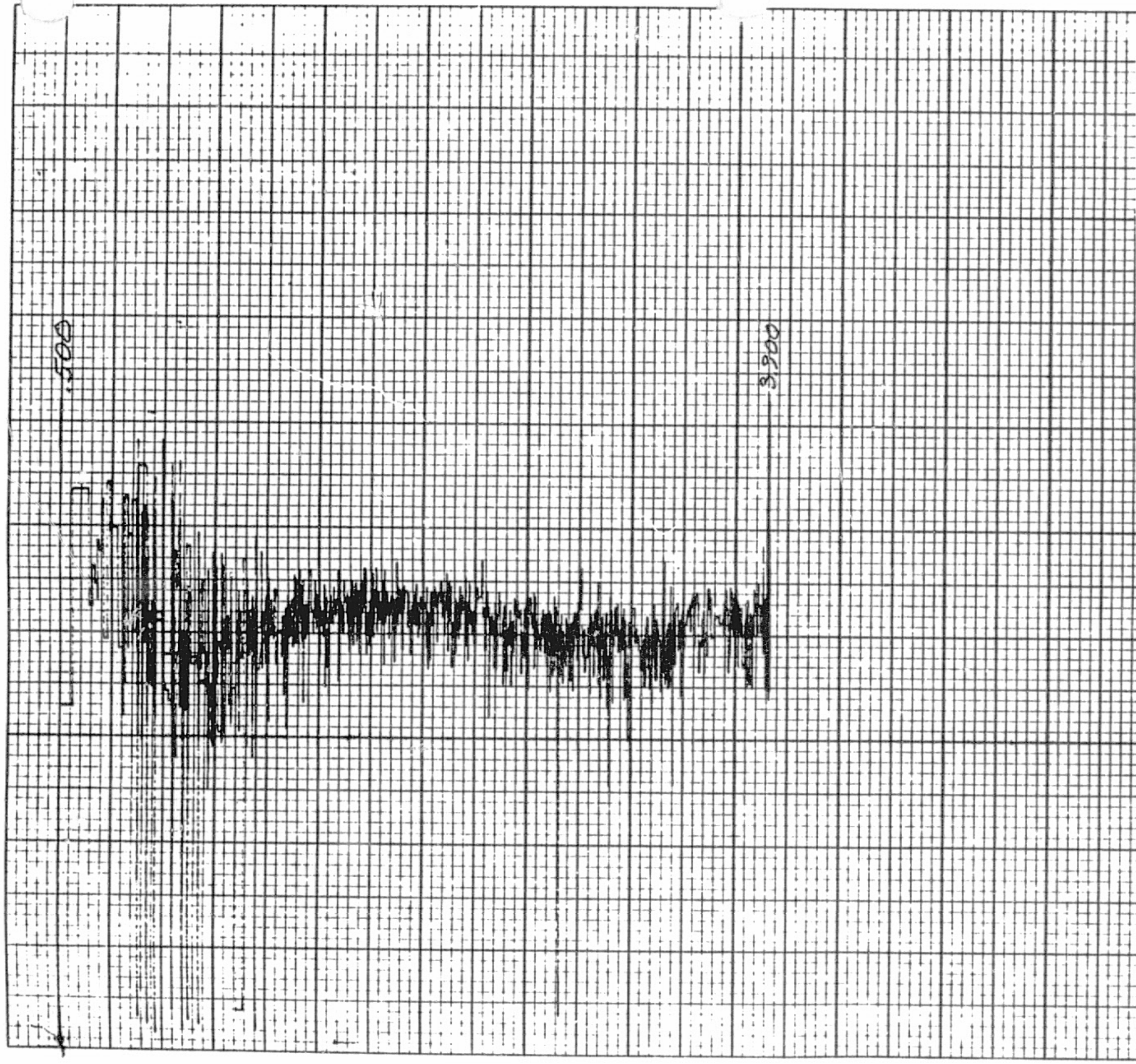
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

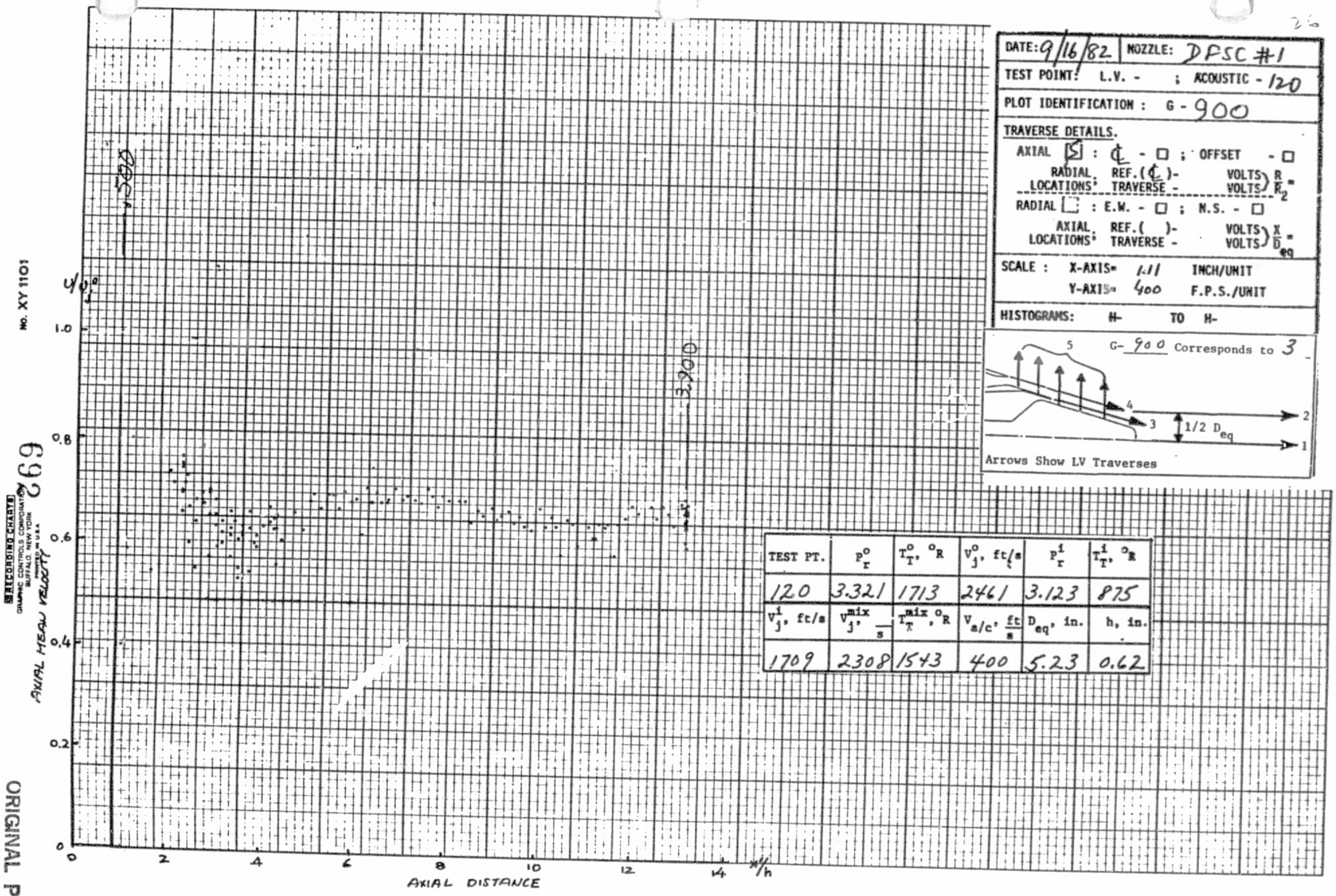
AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS $\frac{X}{D}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-





DATE: 9/16/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 120

PLOT IDENTIFICATION : G - 900

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
120	3.321	1713	2461	3.123	875
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1709	2308	1543	400	5.23	0.62

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693

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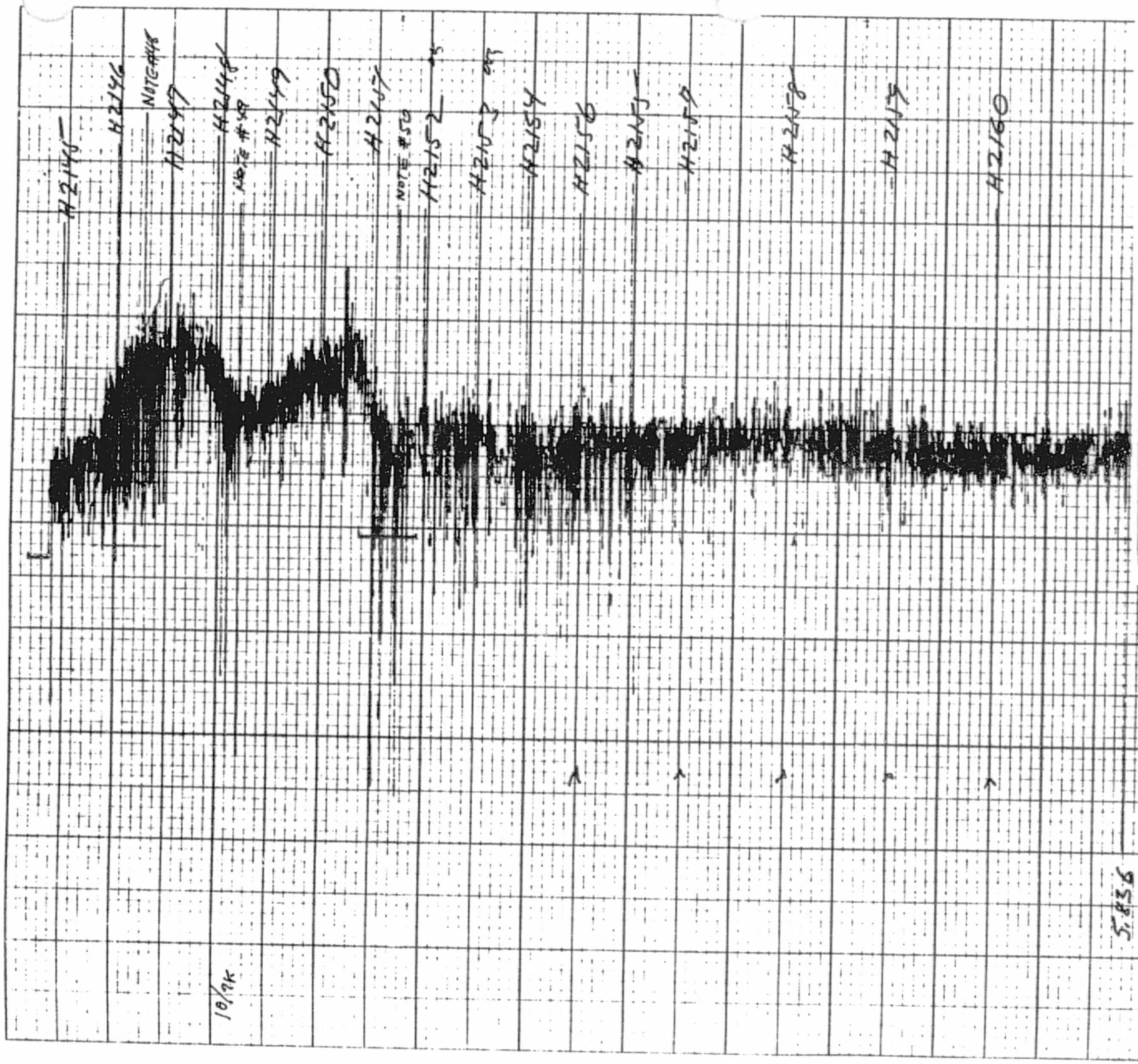

DATE: 9/17/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 120

PLOT IDENTIFICATION : G - 932

TRAVERSE DETAILS.

AXIAL [S] : ℄ - □ ; OFFSET - □

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL [ ] : E.W. - □ ; N.S. - □

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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DATE: 9/17/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 120

PLOT IDENTIFICATION : G - 933

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

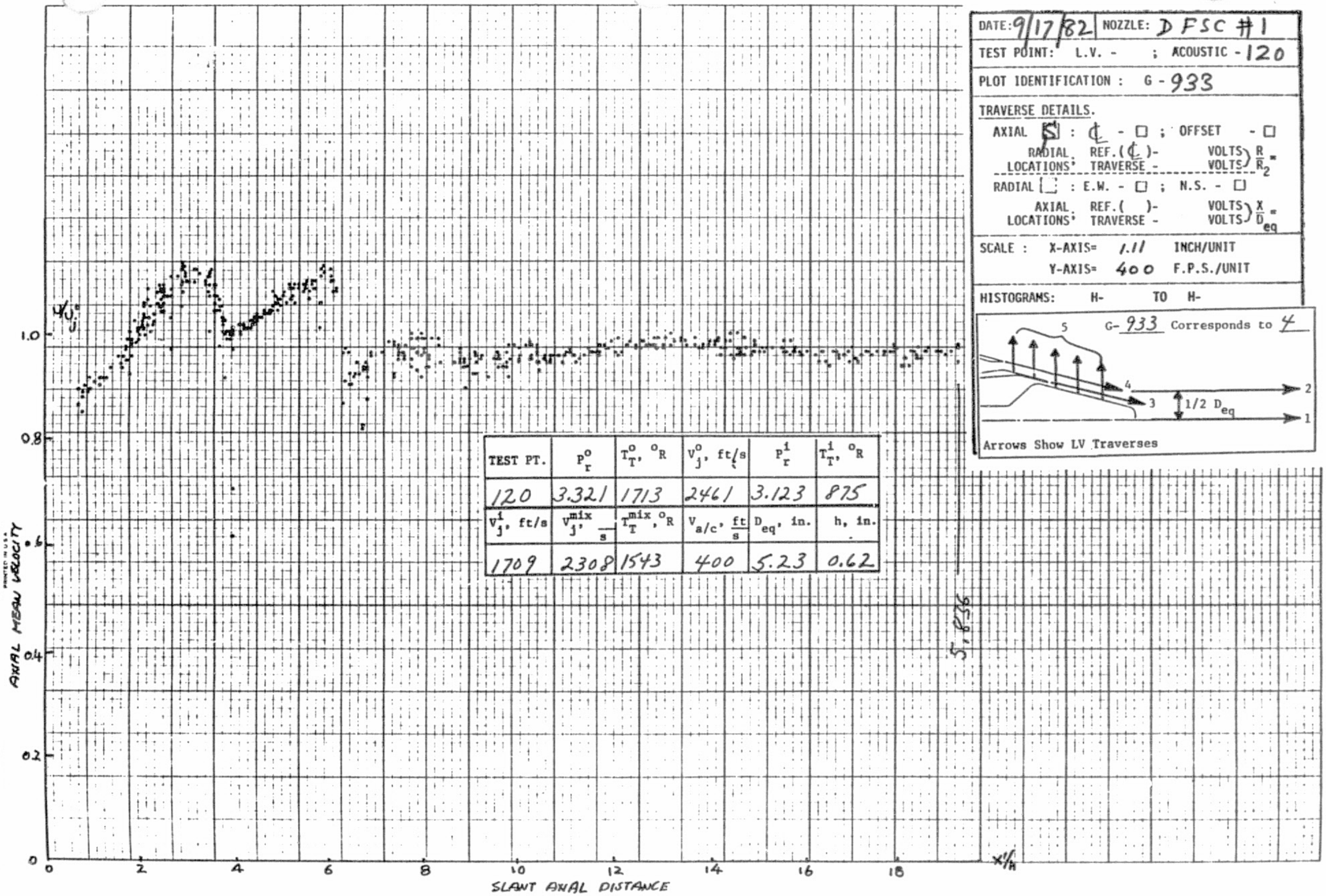
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G- 933 Corresponds to 4

Arrows Show LV Traverses



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
120	3.321	1713	2461	3.123	875
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1709	2308	1543	400	5.23	0.62

NO. XY 1101

694

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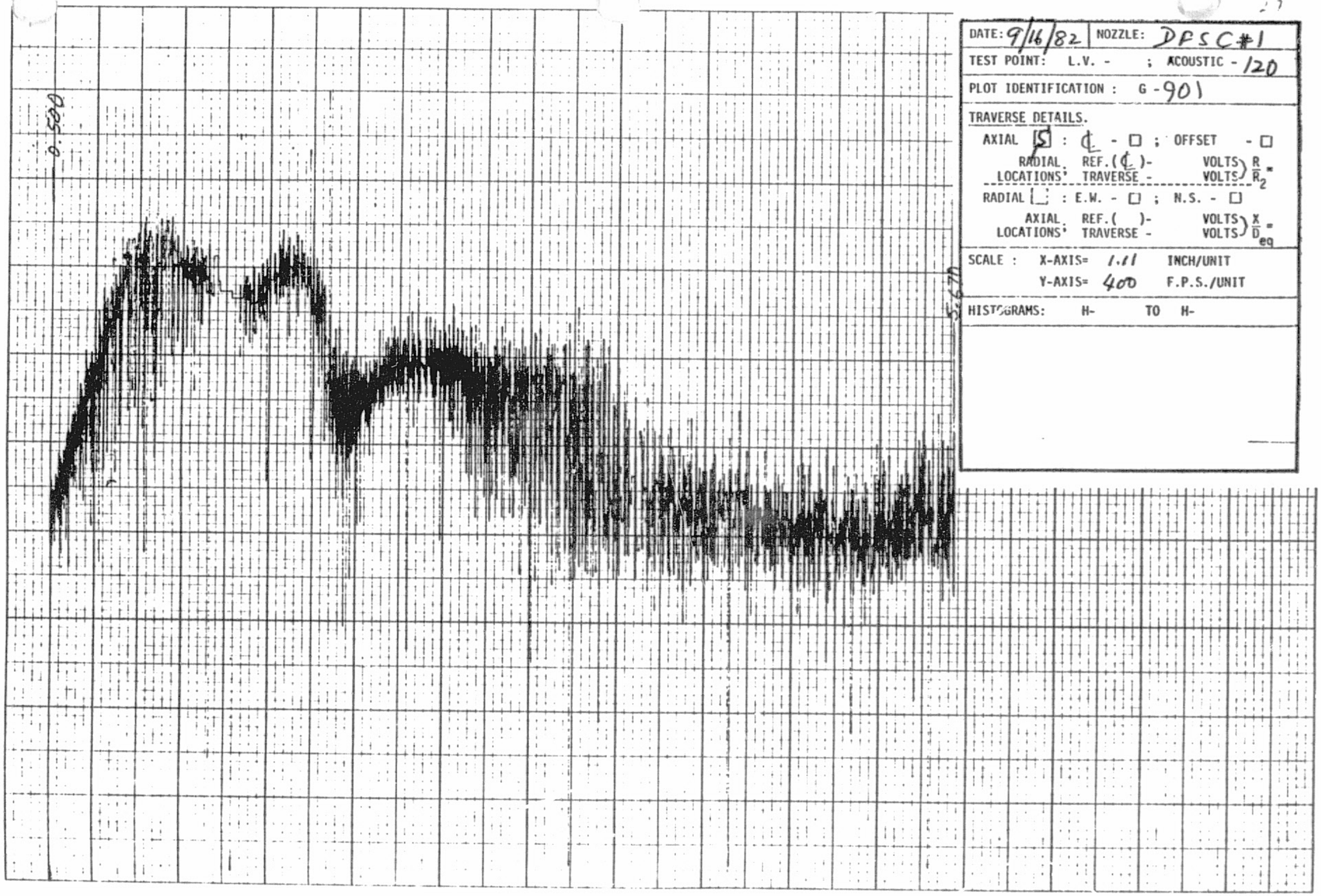

DATE: 9/16/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 120

PLOT IDENTIFICATION : G-901

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

695

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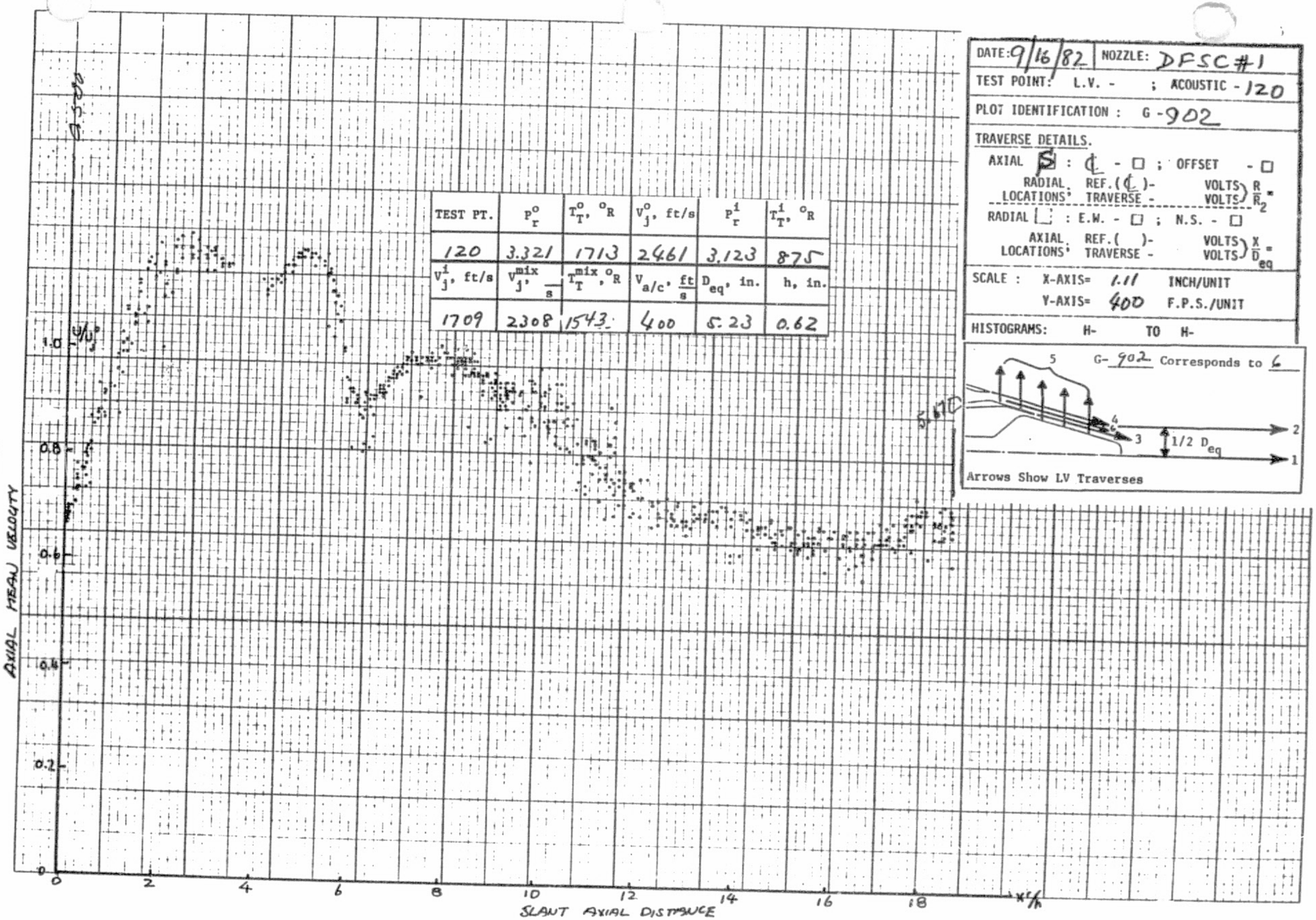

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
120	3.321	1713	2461	3.123	875
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1709	2308	1543	400	5.23	0.62

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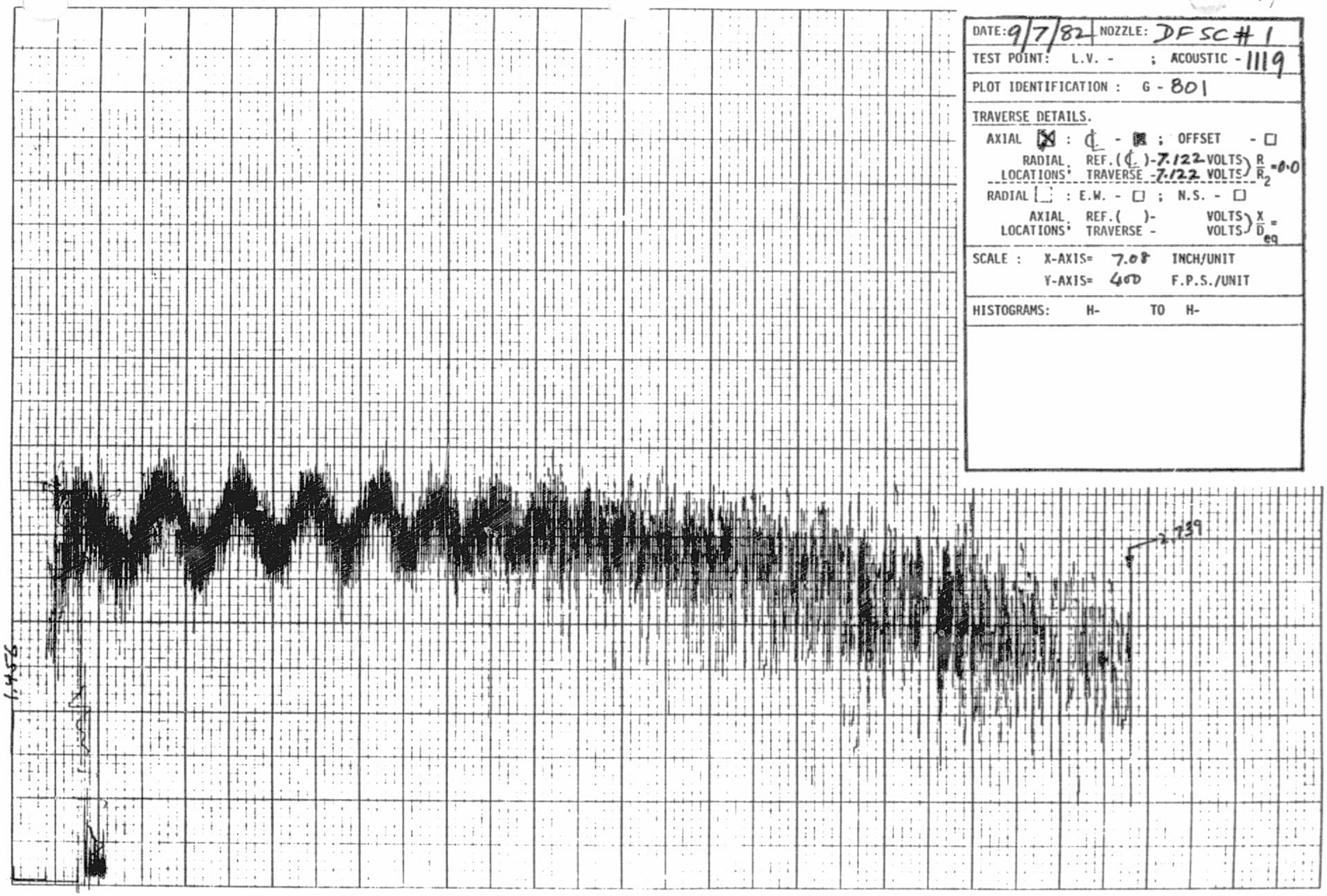


DATE: 9/7/82 NOZZLE: DF SC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 801

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ■ ; OFFSET - □

RADIAL LOCATIONS: REF.(℄)-7.122 VOLTS, TRAVERSE -7.122 VOLTS; $\frac{R}{R_2}$ = 0.0

RADIAL □ : E.W. - □ ; N.S. - □

AXIAL LOCATIONS: REF.( )- VOLTS, TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

DATE: 9/7/82	NOZZLE: DFSC#1
TEST POINT: L.V. - ; ACOUSTIC - 1119	
PLOT IDENTIFICATION : G - 825	

TRAVERSE DETAILS.

AXIAL [X] : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) -7.122 VOLTS; TRAVERSE -7.122 VOLTS; $\frac{R}{R_2}$ = 0.0

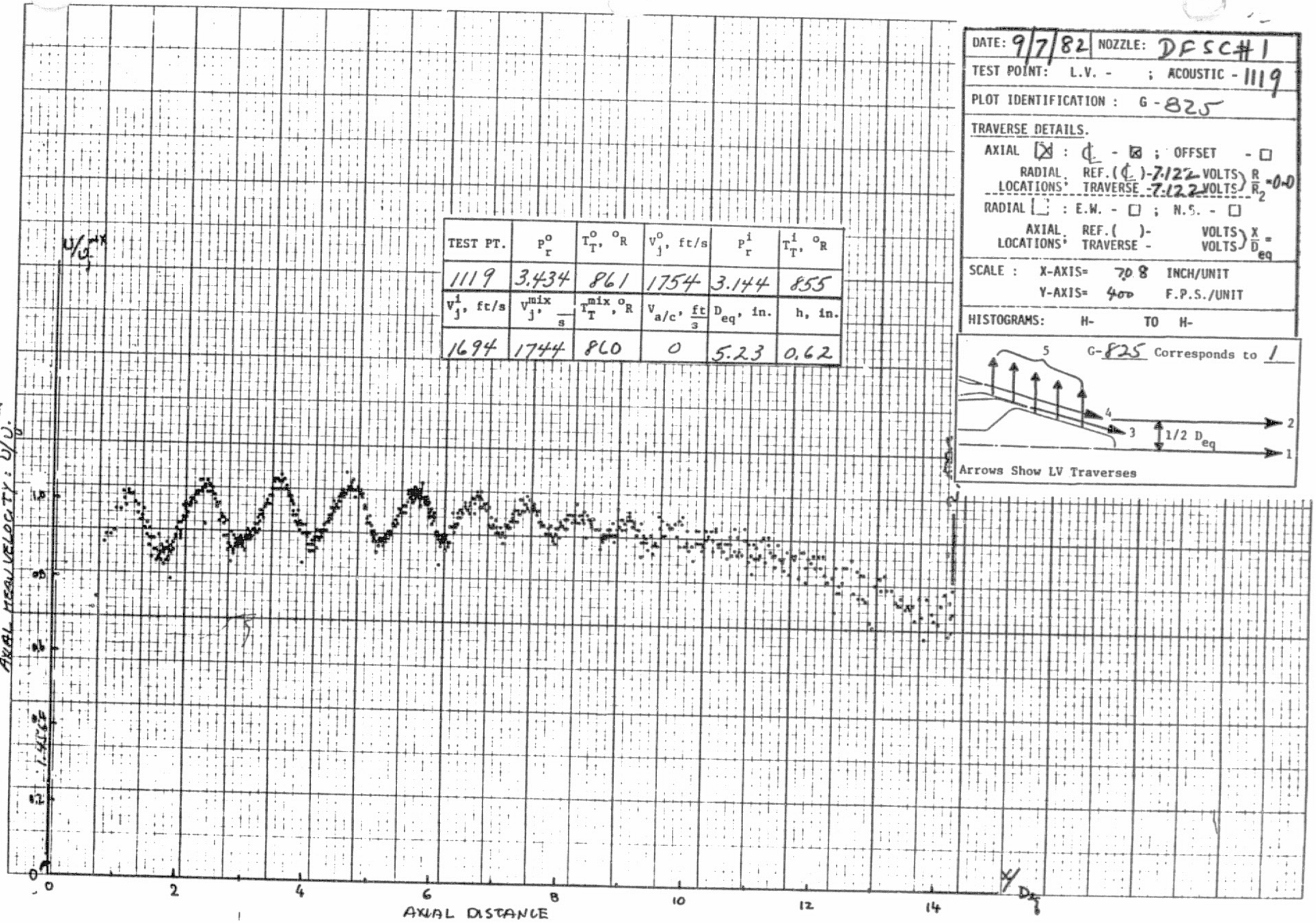
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

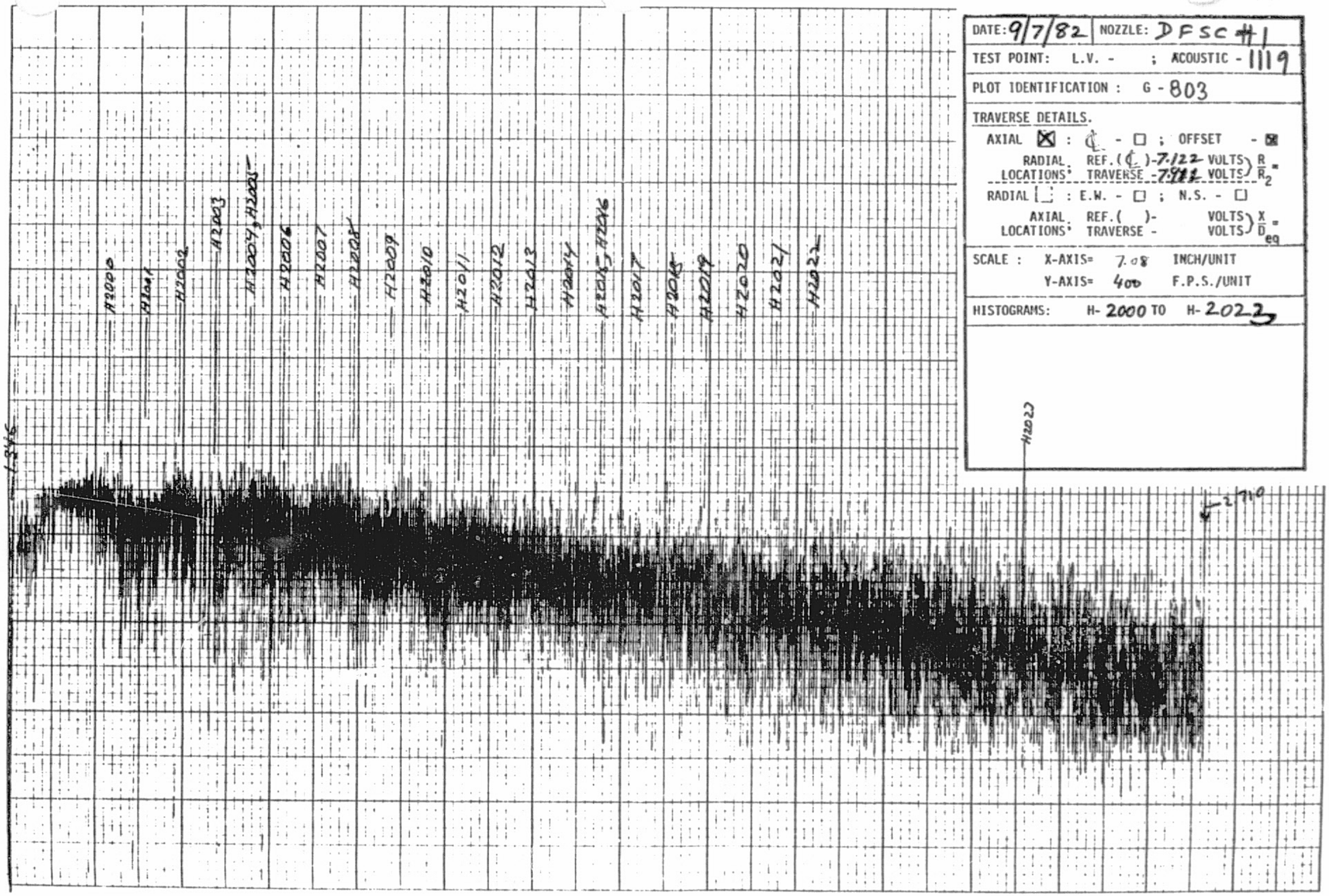
AXIAL LOCATIONS: REF. ( )- VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 70.8 INCH/UNIT; Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62





NO. XY 1101

699

DATE: 9/7/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 826

TRAVERSE DETAILS.

AXIAL ~~☐~~ : ℄ - ☐ ; OFFSET - ~~☐~~

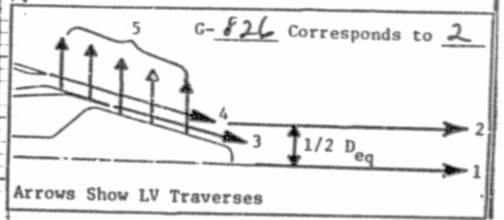
RADIAL LOCATIONS: REF.(℄)- 7.122 VOLTS; TRAVERSE - 7.911 VOLTS) $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

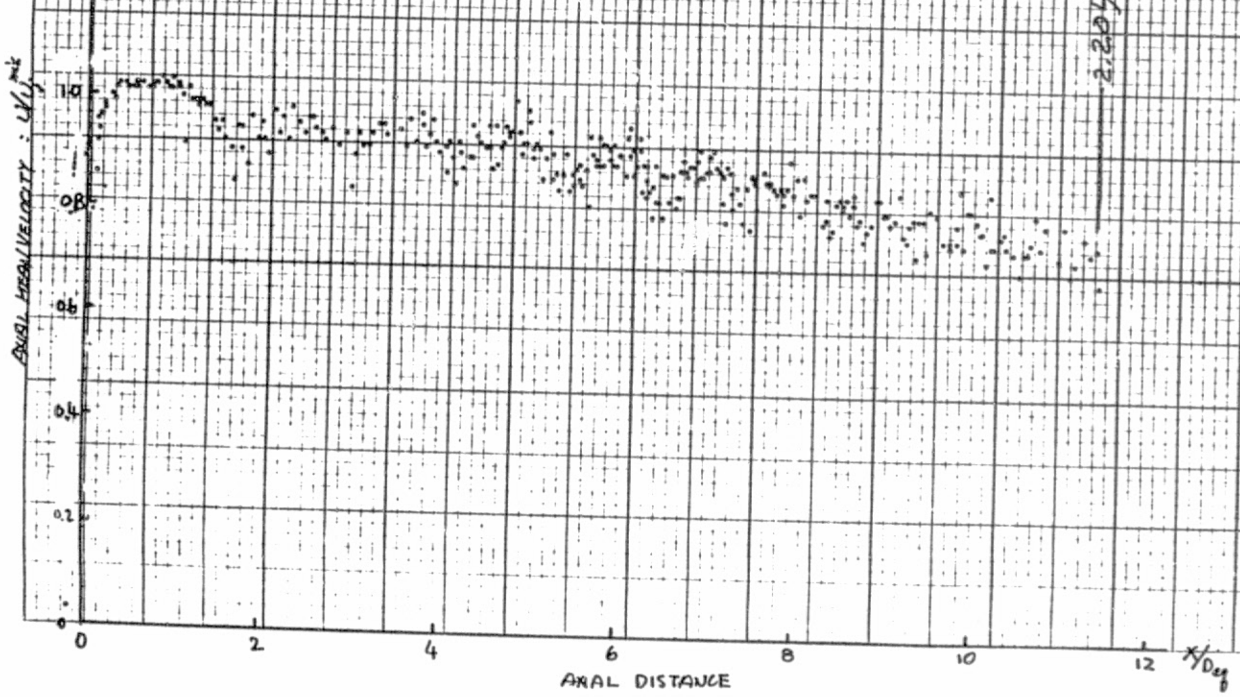
AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS) $\frac{X}{D_{eq}}$ =

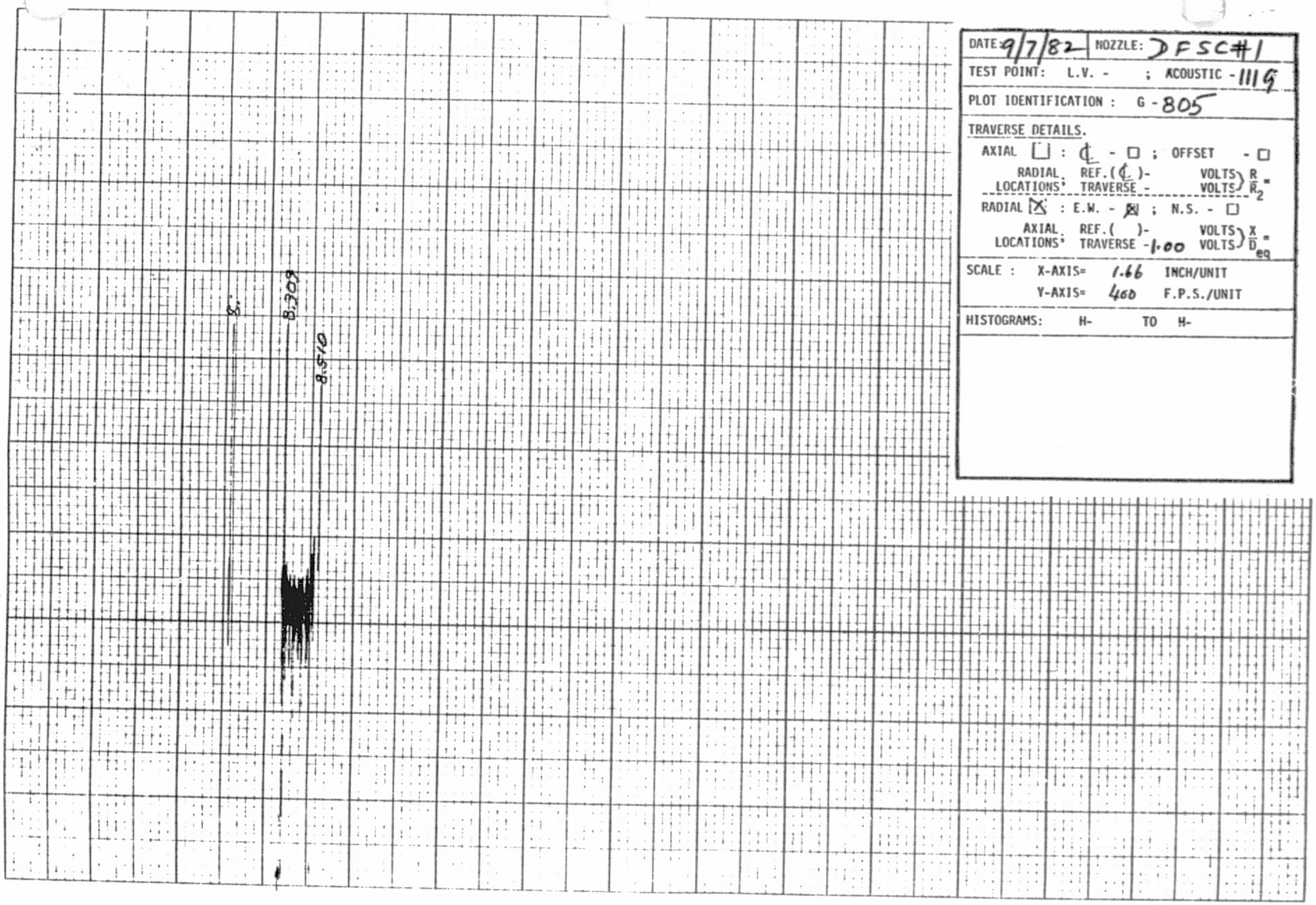
SCALE : X-AXIS= 7.08 INCH/UNIT; Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62





DATE: 9/7/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 111G

PLOT IDENTIFICATION : G - 805

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE -1.00 VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

DATE: 9/7/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 806

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS } $\frac{R}{R_2}$ =

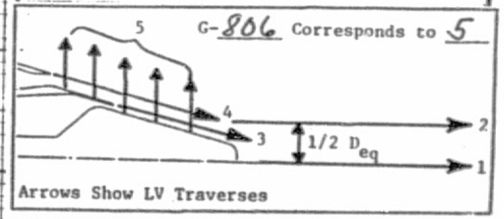
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE -1.00 VOLTS / VOLTS } $\frac{X}{D_{eq}}$ =

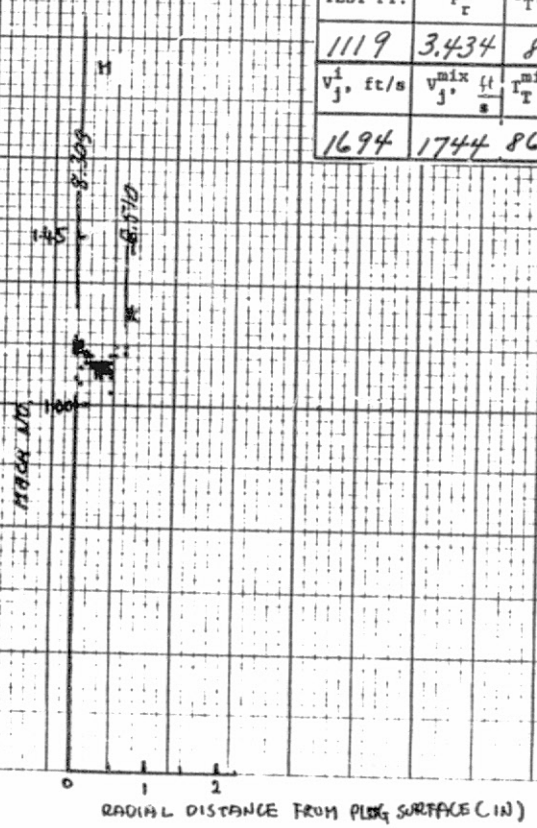
SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62



NO. XY 1101

702

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DATE: 9/7/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 807

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

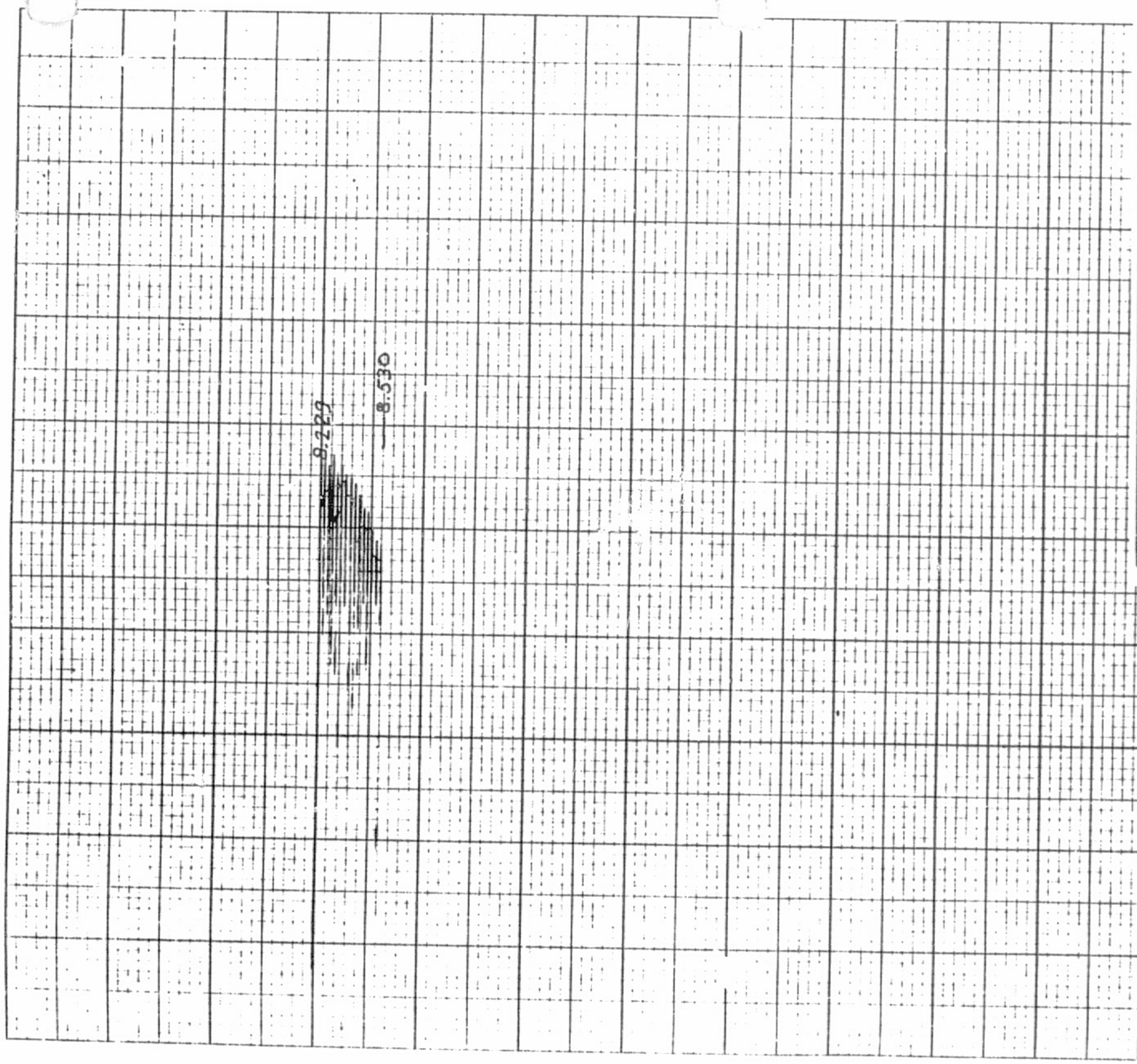
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - 1.50 VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



703

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DATE: 9/7/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 808

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF. (℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

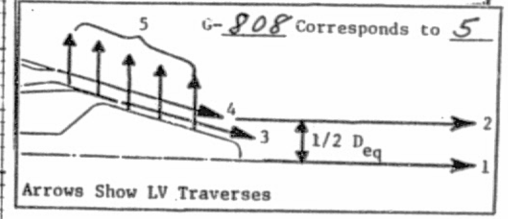
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

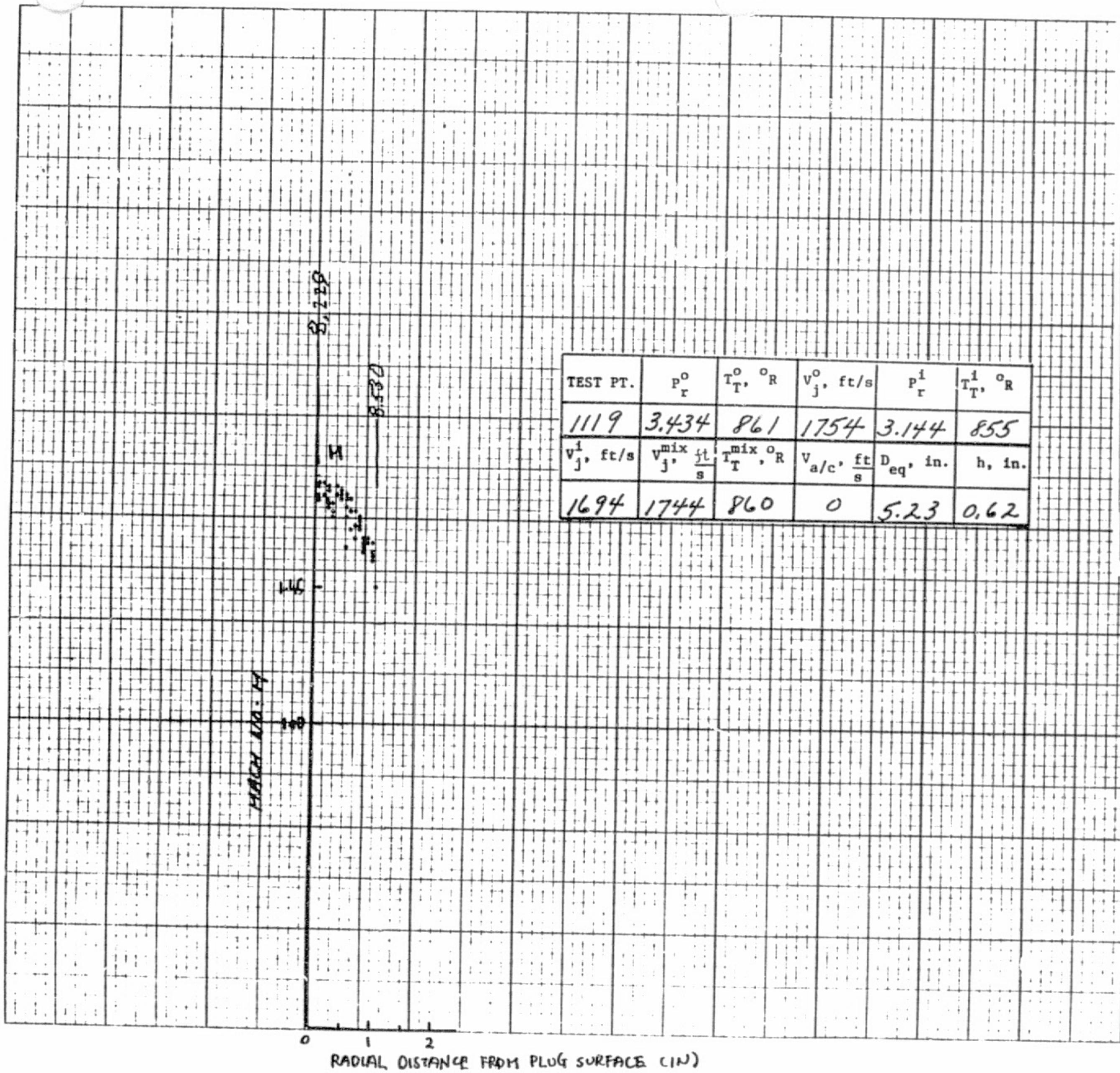
AXIAL LOCATIONS; REF. ( )- TRAVERSE - 1.50 VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-





TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62

NO. XY 11C1

704

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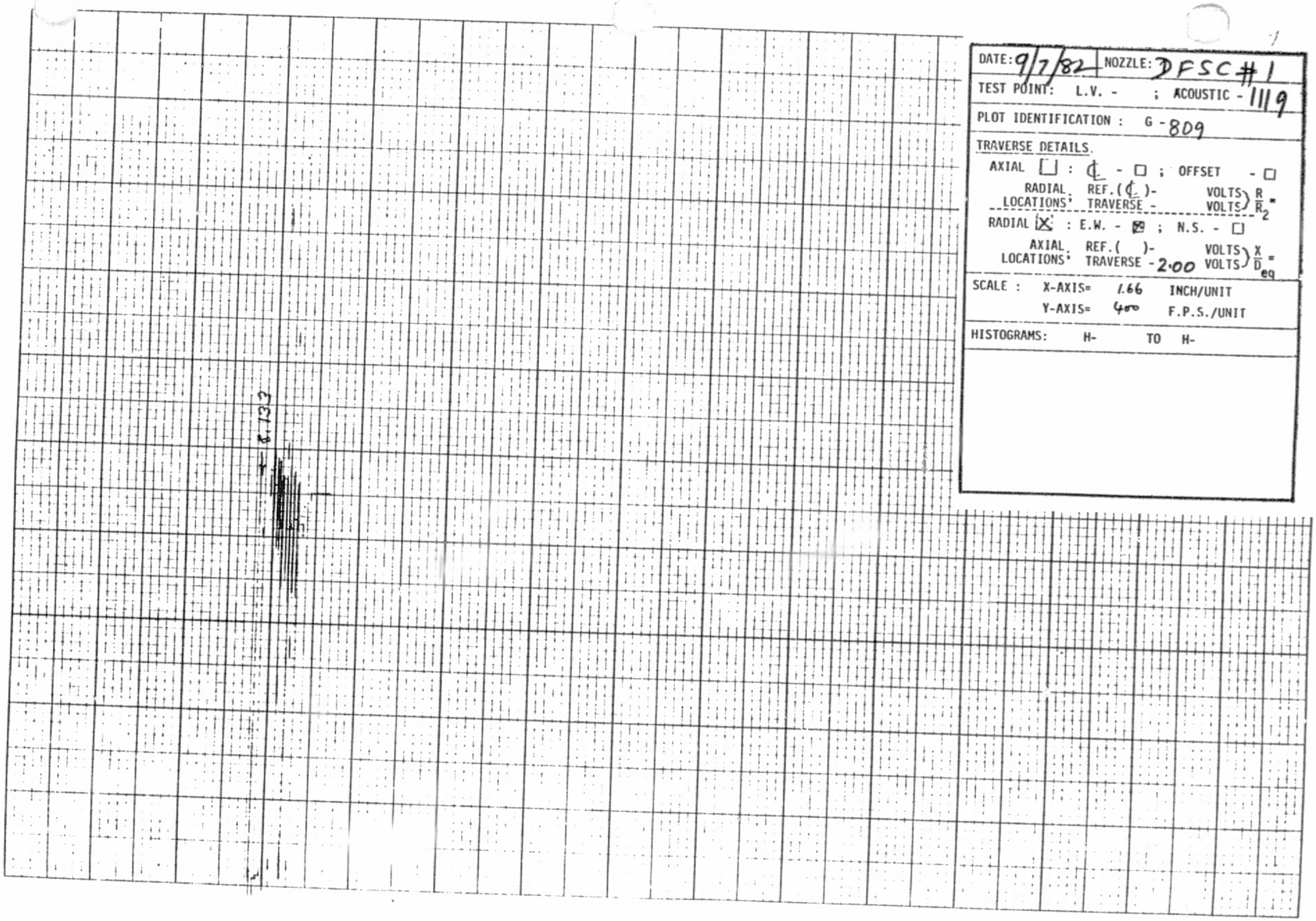

DATE: 9/7/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 809

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - 2.00 VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

705

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DATE: 9/7/82	NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 810

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

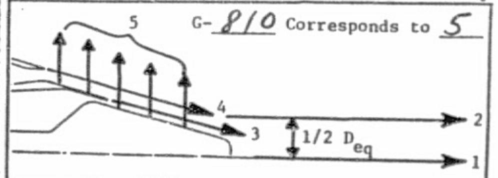
AXIAL LOCATIONS: REF. ( )- TRAVERSE - 2.00 VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

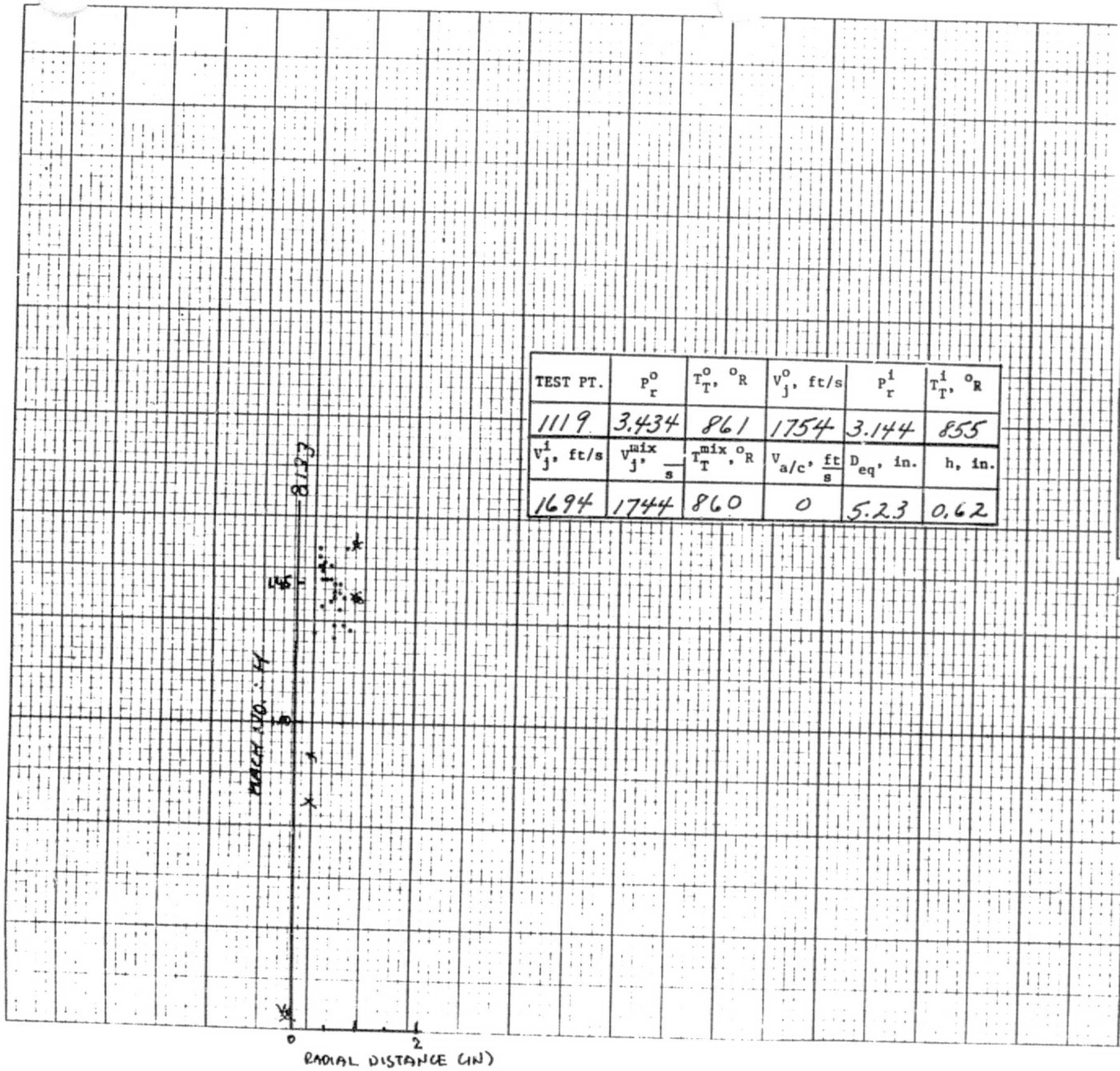
HISTOGRAMS: H- TO H-

G- 810 Corresponds to 5



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62



NO. XY 1101

706

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DATE: 9/7/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 811

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - VOLTS; TRAVERSE - VOLTS } $\frac{R}{R_2}$ =

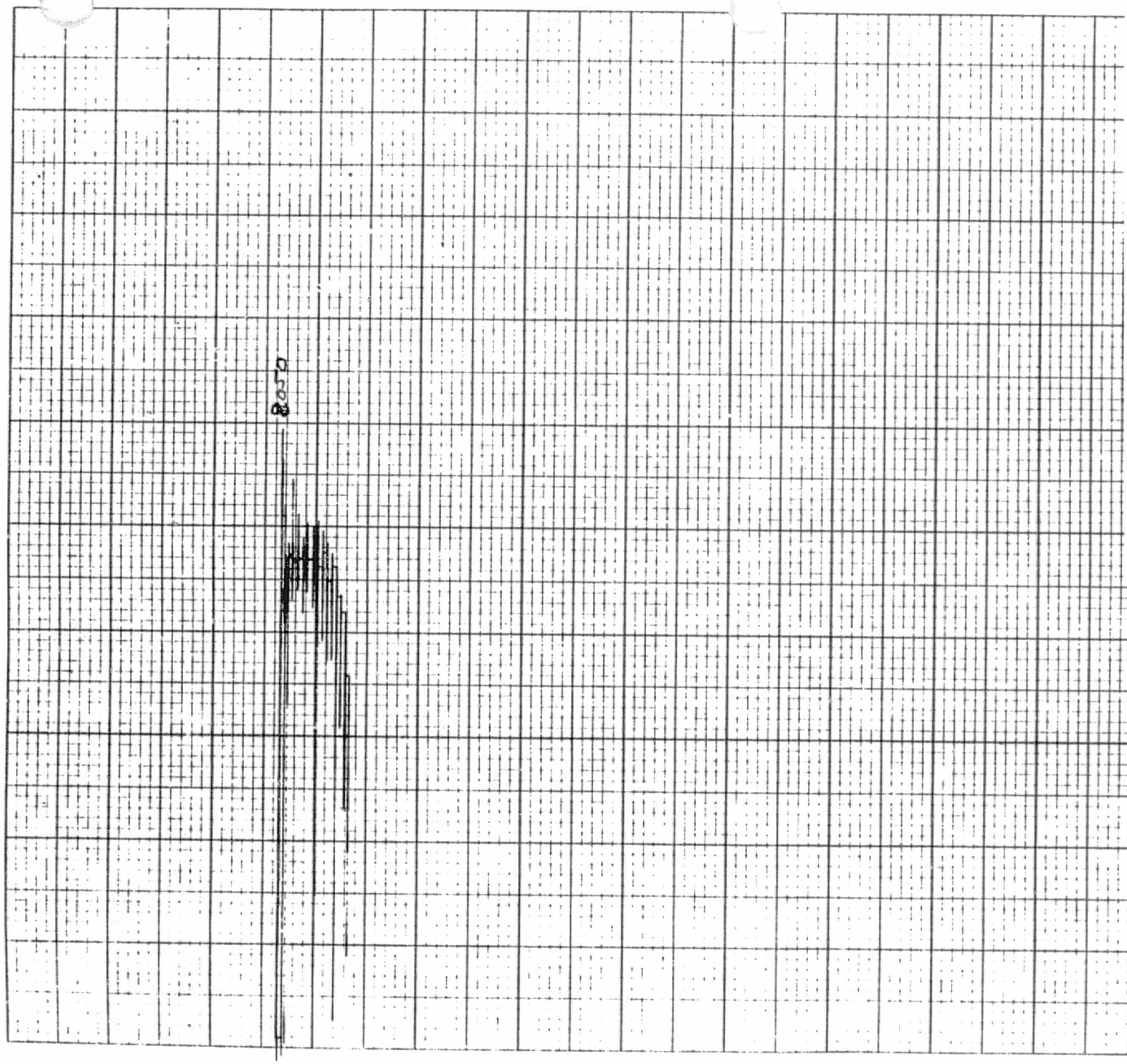
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - VOLTS; TRAVERSE -2.50 VOLTS } $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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708

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DATE: 9/7/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G-812

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- VOLTS; TRAVERSE - VOLTS; $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

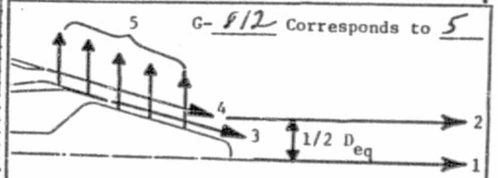
AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - 2.50 VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

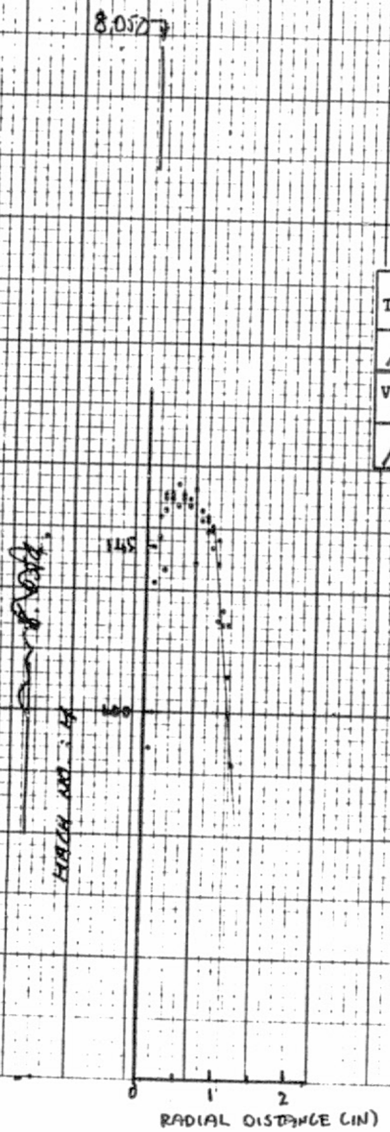
HISTOGRAMS: H- TO H-

G- 812 Corresponds to 5



Arrows Show LV Traverses

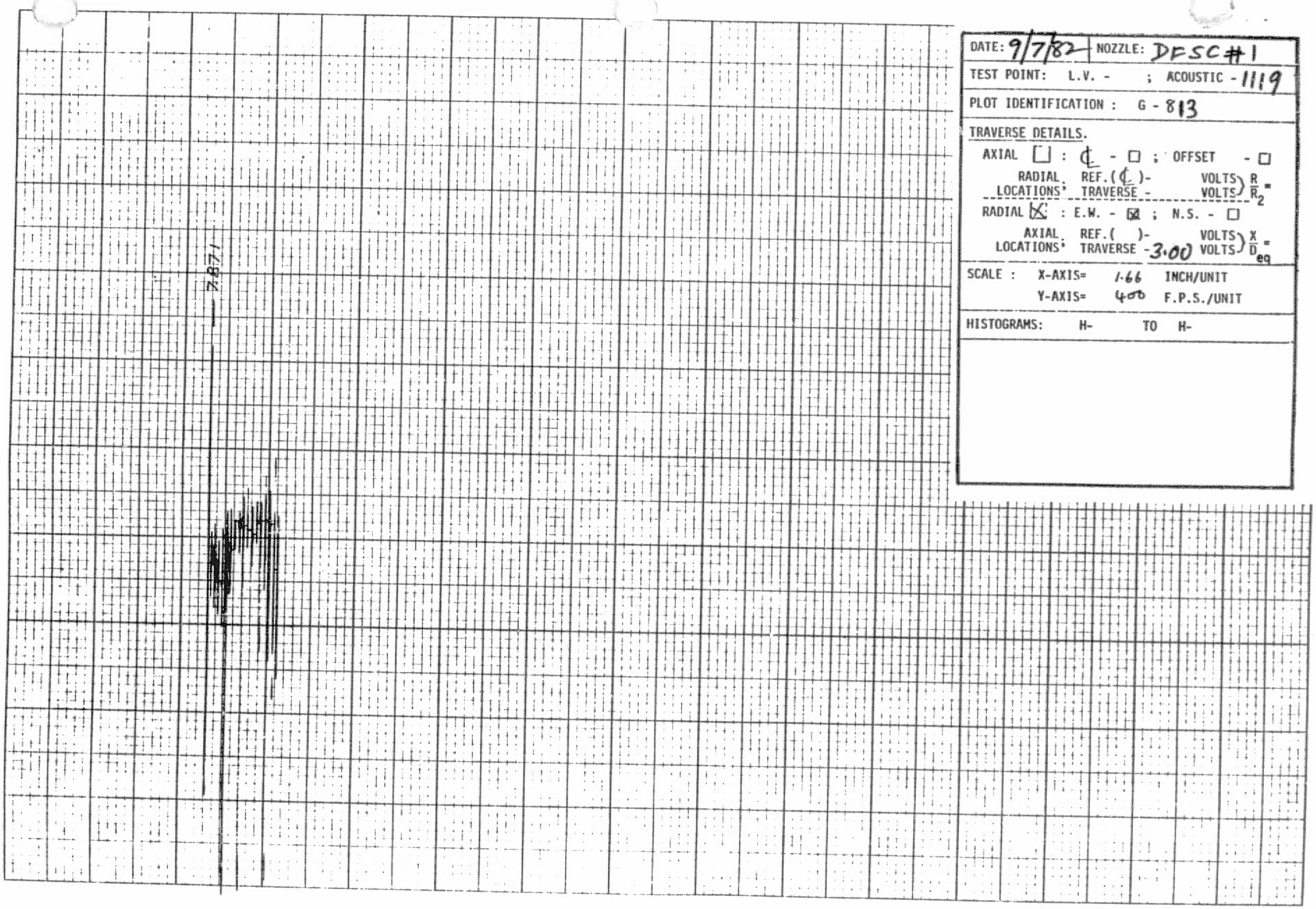
TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62



No. XY 1101

709

RECORDING CHARTS



DATE: 9/7/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 813

TRAVERSE DETAILS.

AXIAL [ ] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS } R/R_2 =

RADIAL [X] : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE -3.00 VOLTS / VOLTS } X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

ORIGINAL PAGE IS OF POOR QUALITY

DATE: 9/7/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 814

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

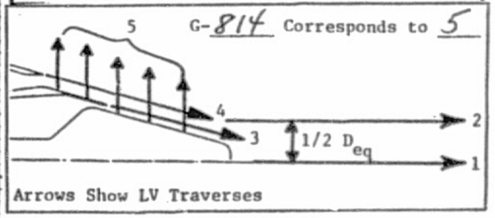
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE -3.00 VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

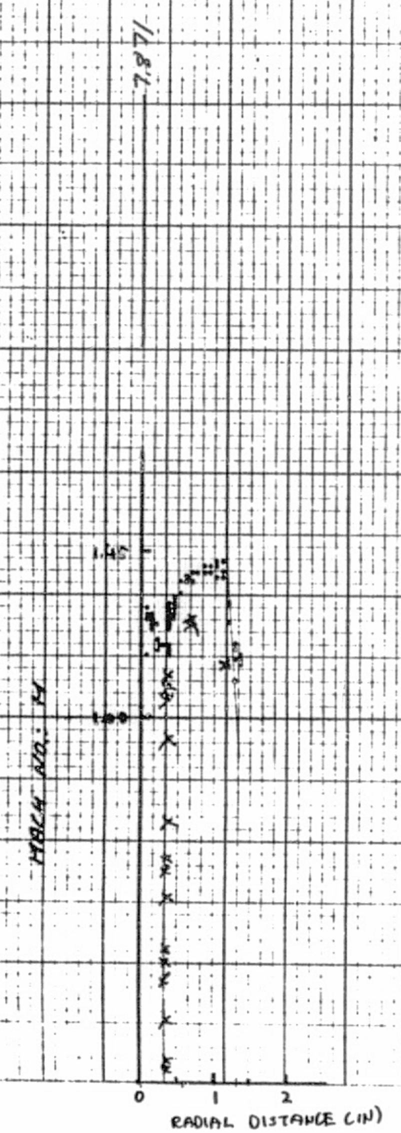
SCALE : X-AXIS= 1.66 INCH/UNIT

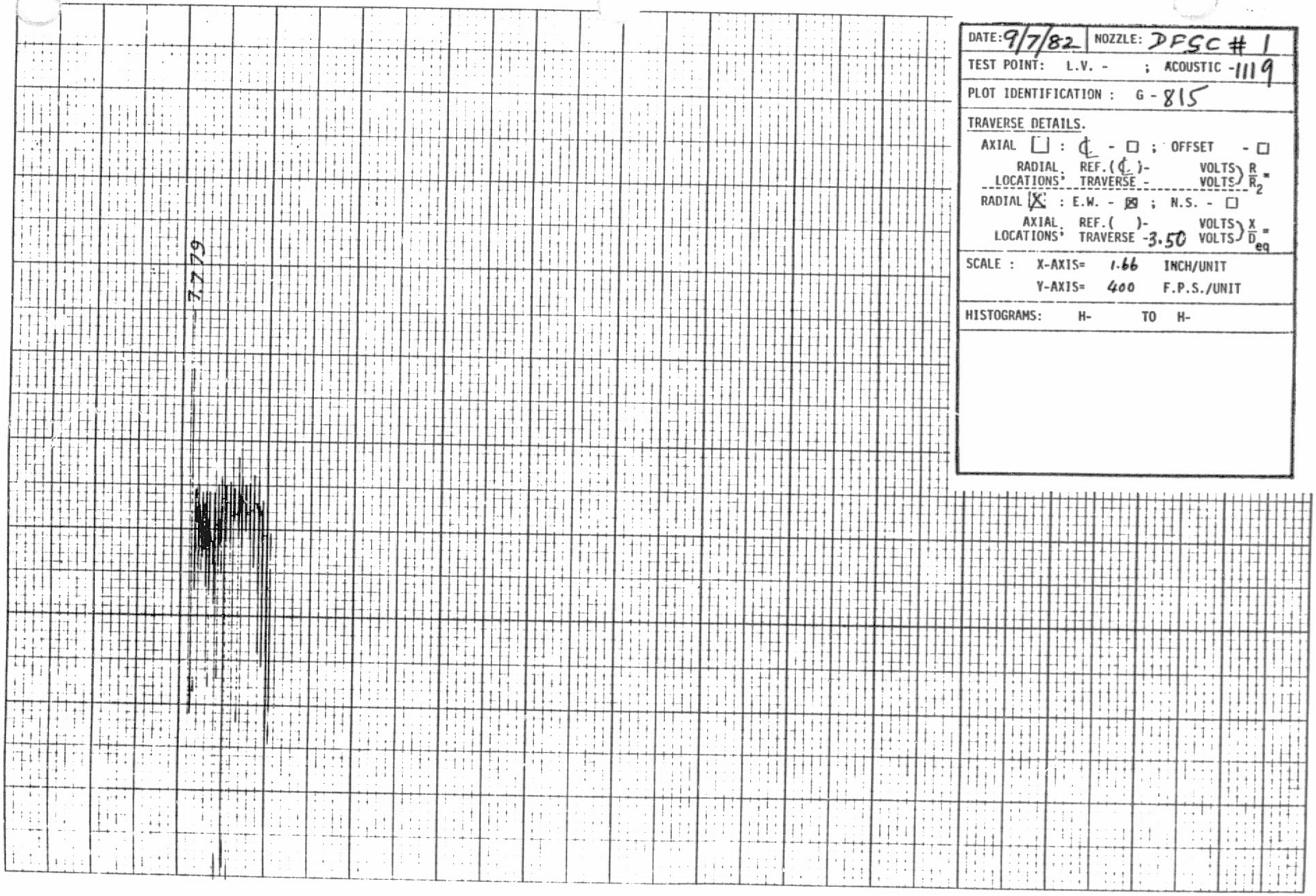
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62





DATE: 9/7/82 NOZZLE: DFSC # 1

TEST POINT: L.V. - ; ACOUSTIC -1119

PLOT IDENTIFICATION : G - 815

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE -3.50 VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

DATE: 9/7/82	NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC -1119

PLOT IDENTIFICATION : G -816

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

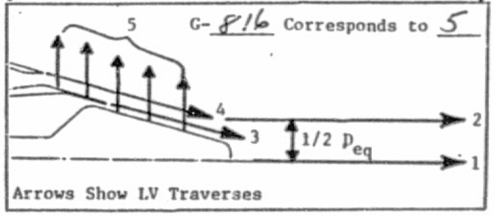
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ■ ; N.S. - ☐

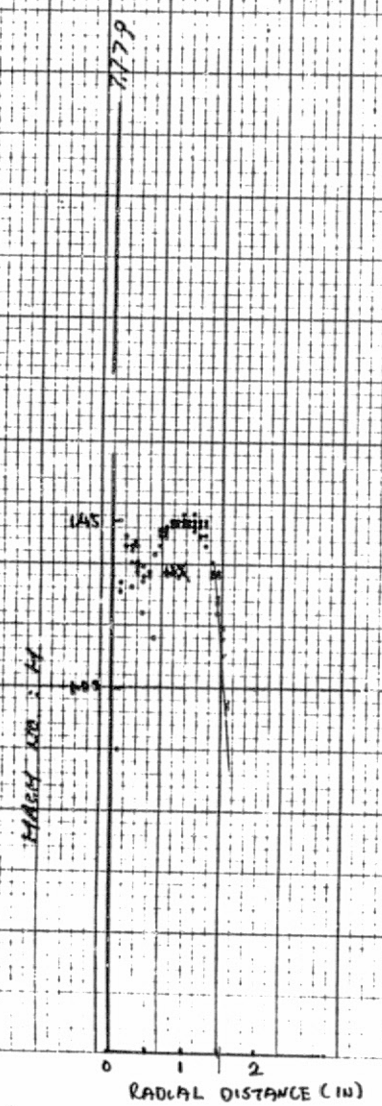
AXIAL LOCATIONS: REF.( )- TRAVERSE -3.50 VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62



NO. XY 1101

712

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DATE: 9/7/82 | NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 817

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - VOLTS, TRAVERSE - VOLTS $\frac{R}{R_2}$ =

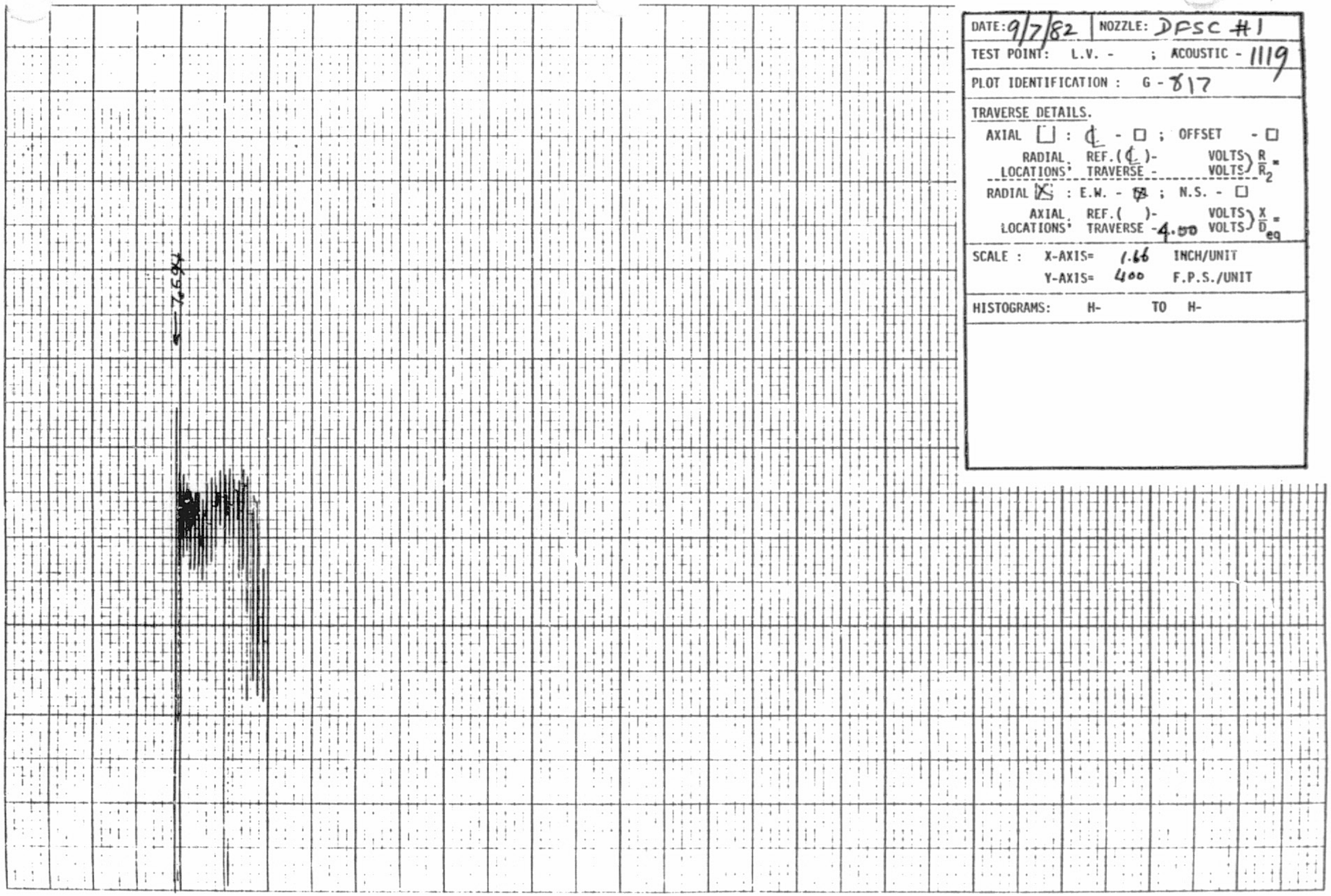
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - VOLTS, TRAVERSE - 4.00 VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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713

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DATE: 9/7/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 818

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

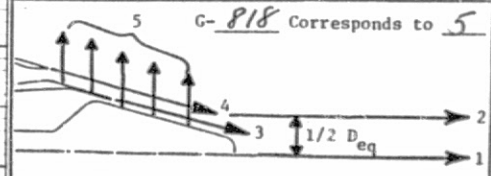
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - 4.00 VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

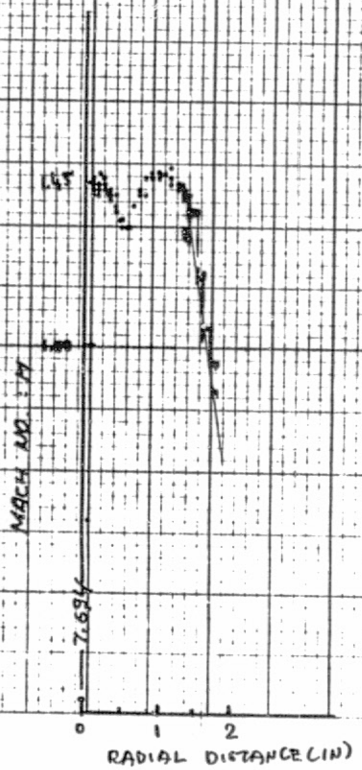
HISTOGRAMS: H- TO H-



G- 818 Corresponds to 5

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62



714

NO. XY 1101

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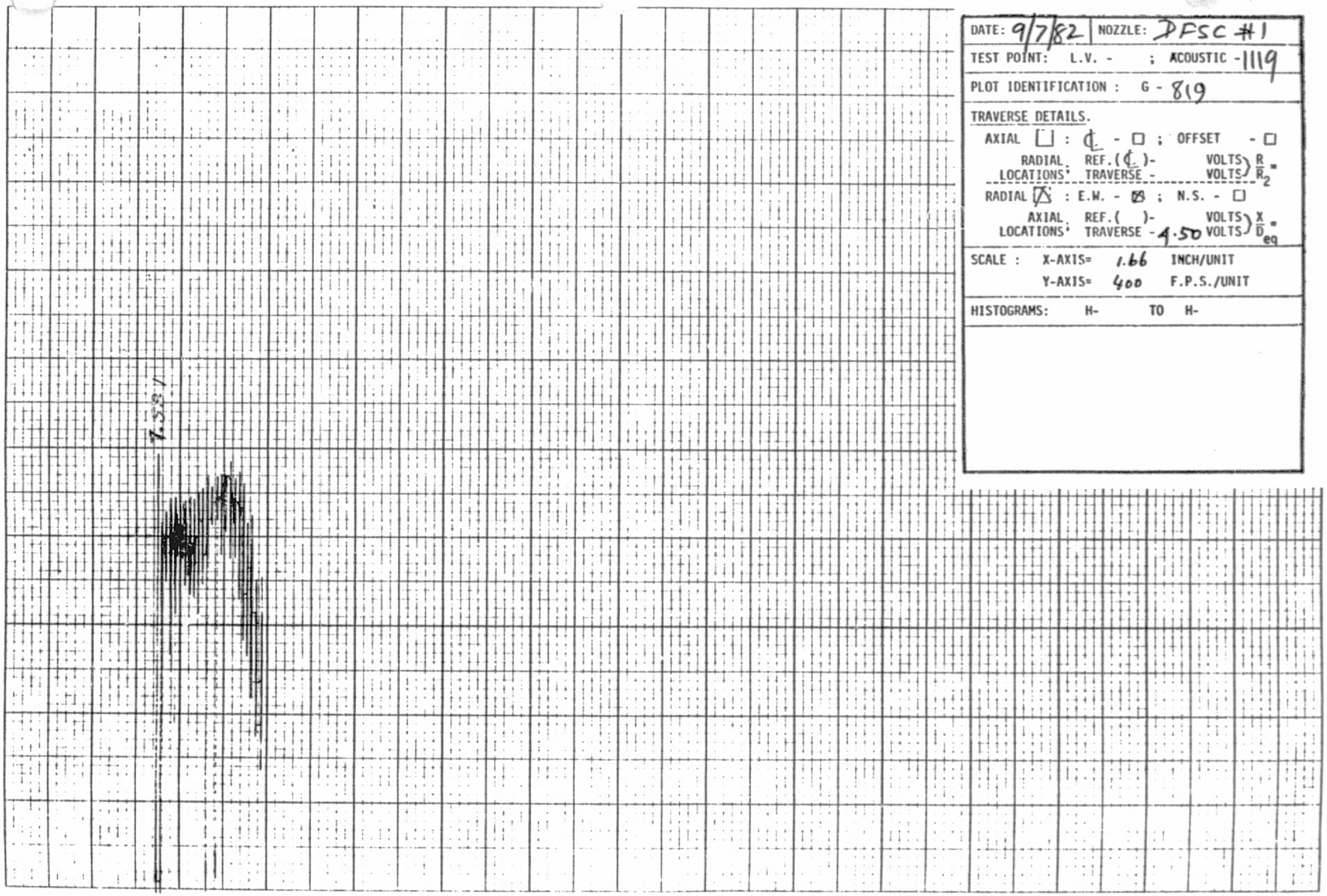


DATE: 9/7/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1119	
PLOT IDENTIFICATION : G - 819	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - 4.50 VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

715

DATE: 9/7/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G-820

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - 4.50 VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

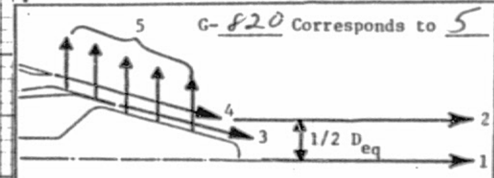
SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

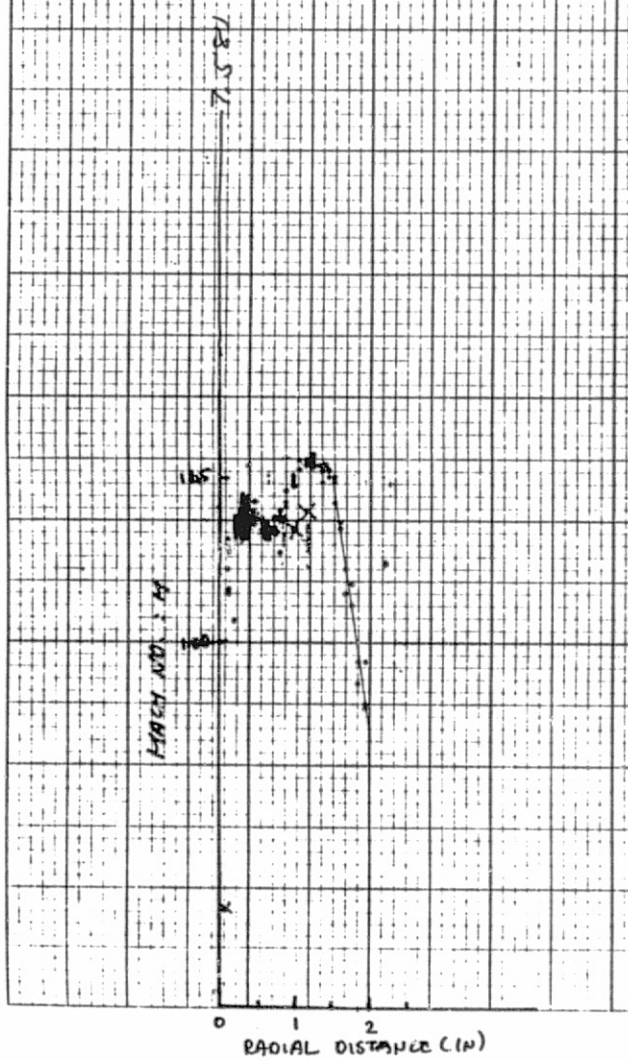
HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, $\frac{}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62

G-820 Corresponds to 5



Arrows Show LV Traverses



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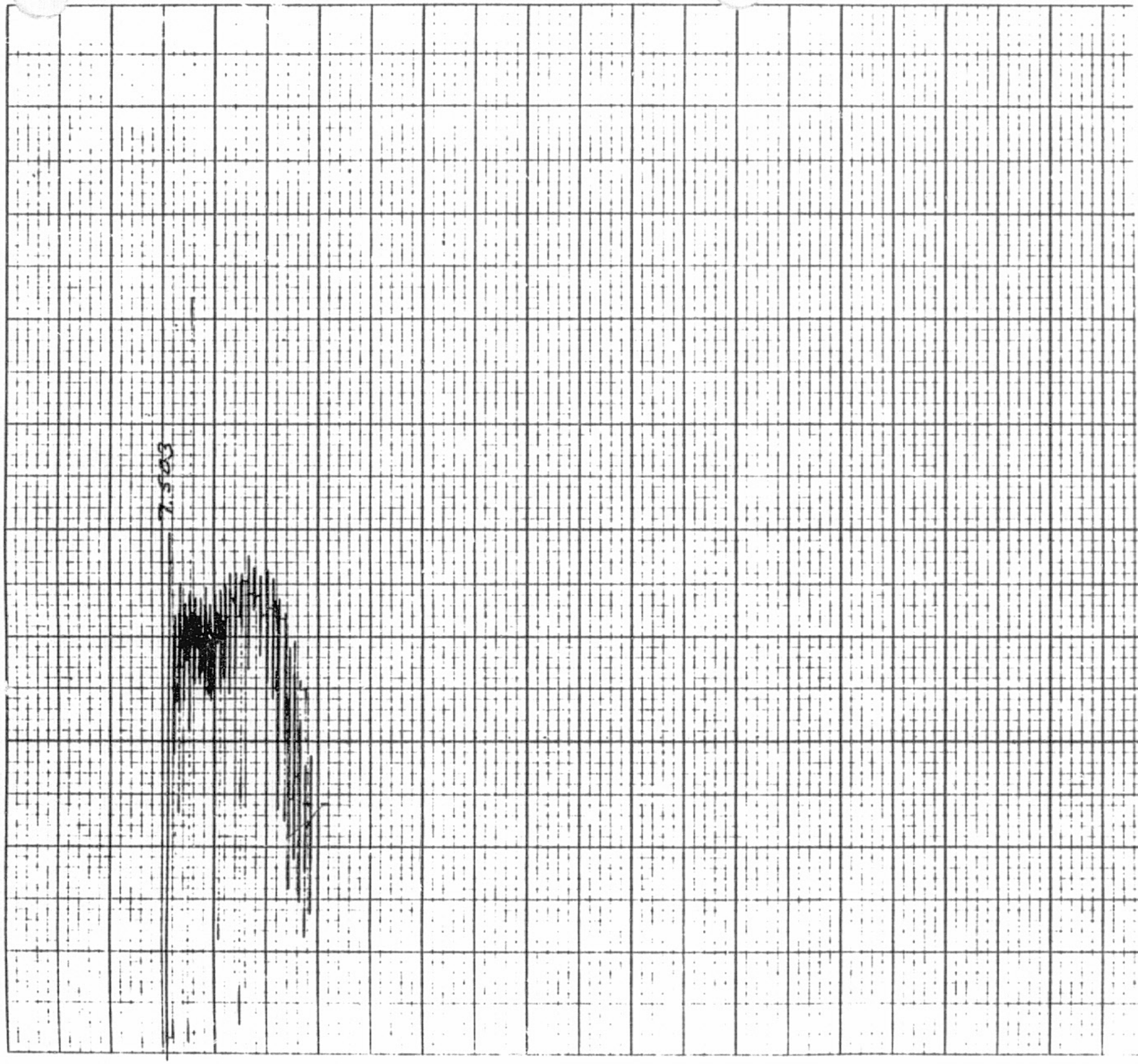
C-3

NO. XY 1101



DATE: 9/7/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1119	
PLOT IDENTIFICATION : G - 821	

TRAVERSE DETAILS.

AXIAL [ ] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [X] : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS; REF.( )- TRAVERSE - 5.00 VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

717

DATE: 9/7/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 822

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS) VOLTS) $\frac{R}{R_2}$ =

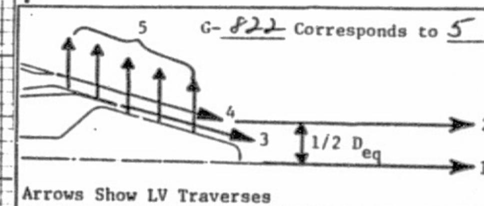
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - 5.00 VOLTS) VOLTS) $\frac{X}{D_{eq}}$ =

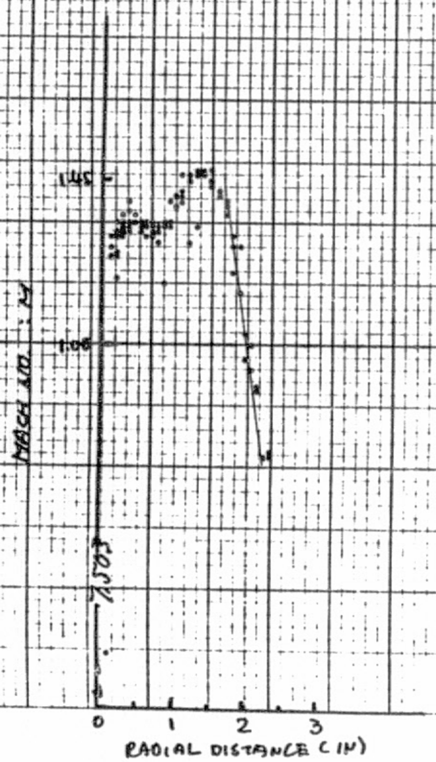
SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62



NO. XY 1101

718

GRAPHIC CONTROLS CORPORATION RECORDING CHARTS

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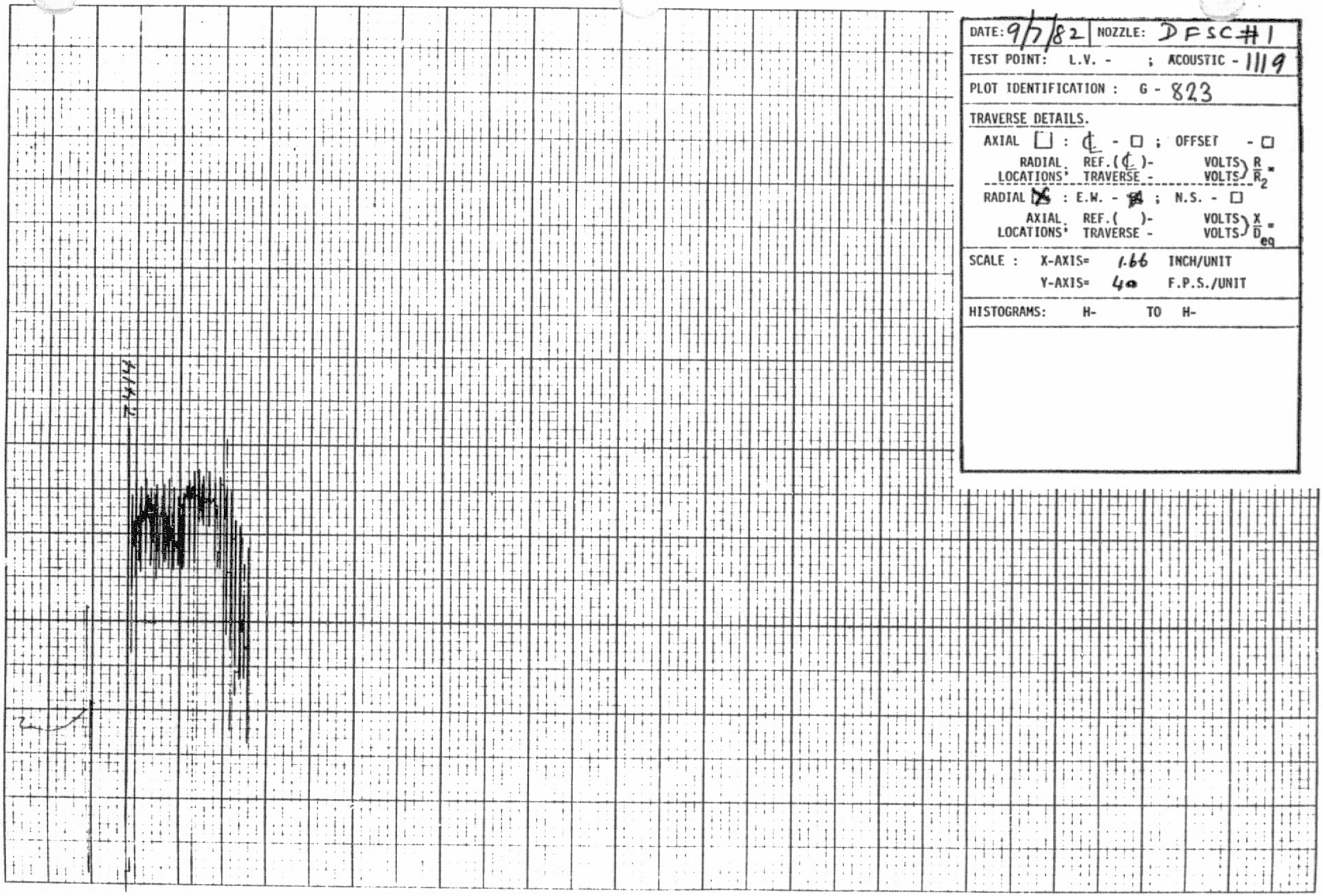

DATE: 9/7/82 | NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 823

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 40 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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OF POOR QUALITY

DATE: 9/7/82 | NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 824

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS R/R_2 =

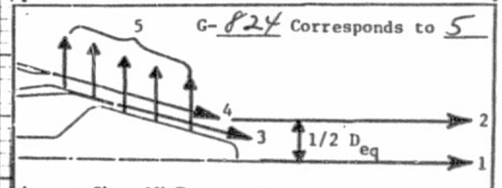
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS X/D_{eq} =

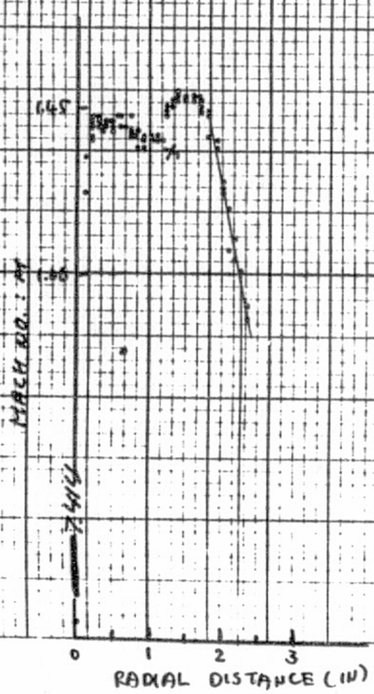
SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62



720

NO. XY 1101

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

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DATE: 9/7/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1119	
PLOT IDENTIFICATION : G - 827	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

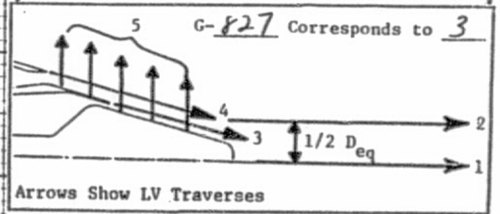
RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

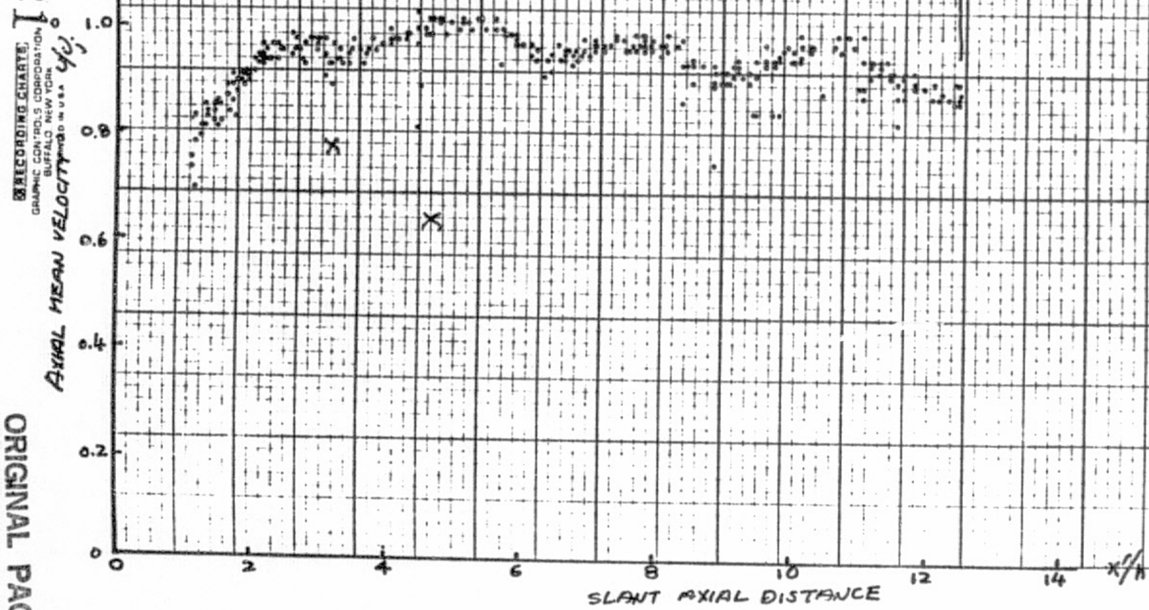
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

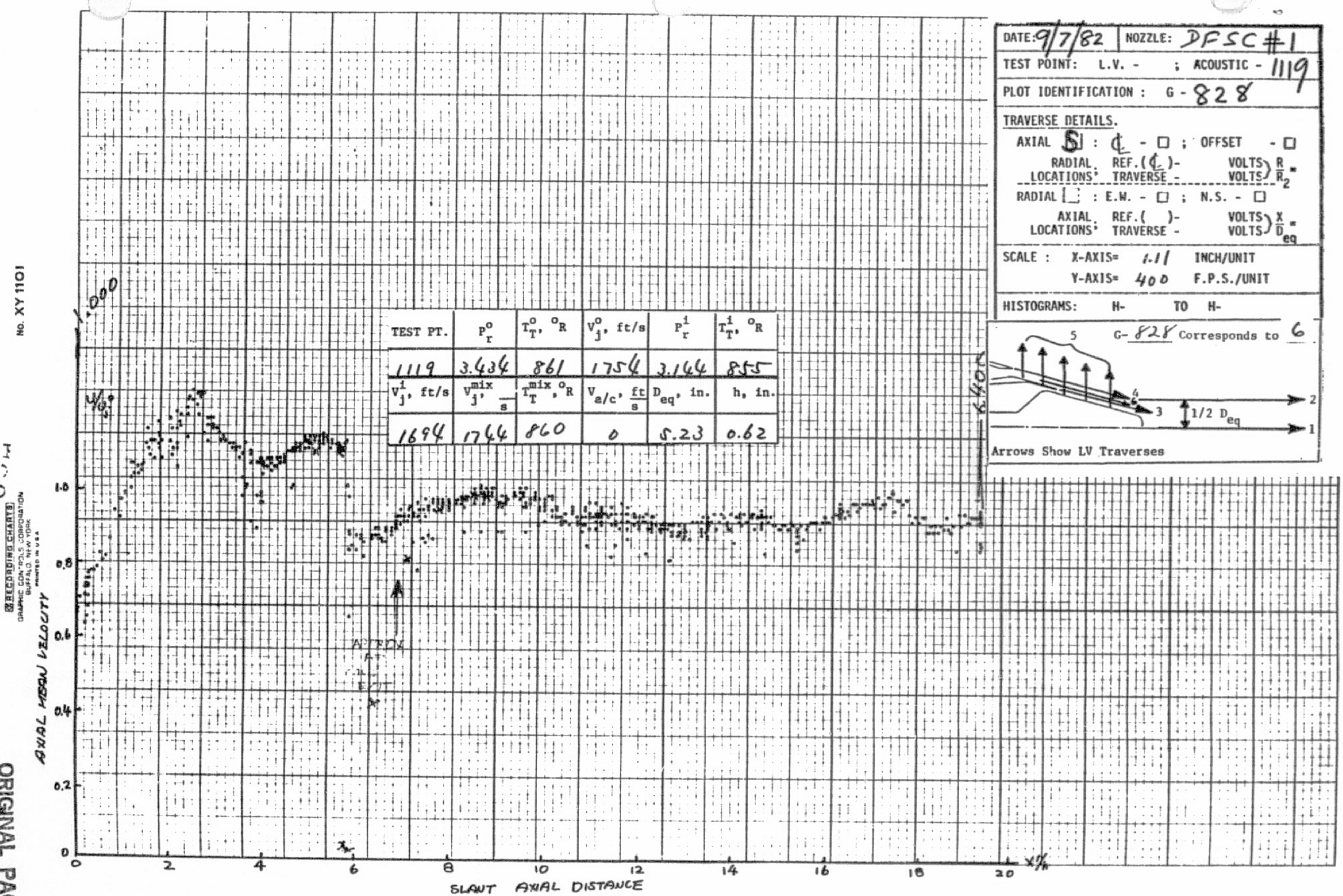


TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62



1.000

4464



DATE: 9/7/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G - 828

TRAVERSE DETAILS.

AXIAL S : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G- 828 Corresponds to 6

1 2 3 4 5 6 1/2 D_{eq}

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62

NO. XY 1101

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DATE: 9/8/72 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1119

PLOT IDENTIFICATION : G-829

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

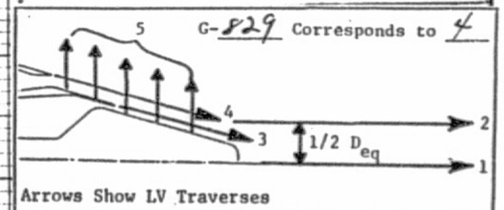
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

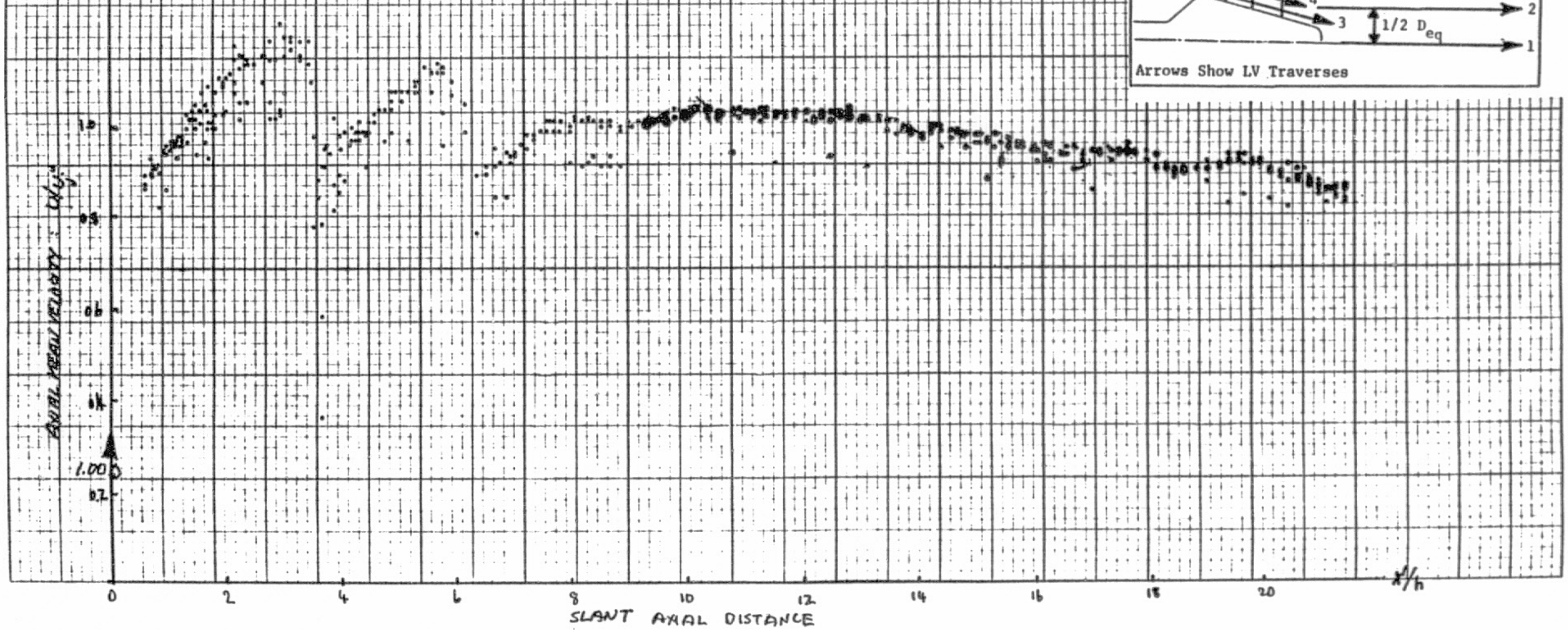
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1119	3.434	861	1754	3.144	855
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1694	1744	860	0	5.23	0.62



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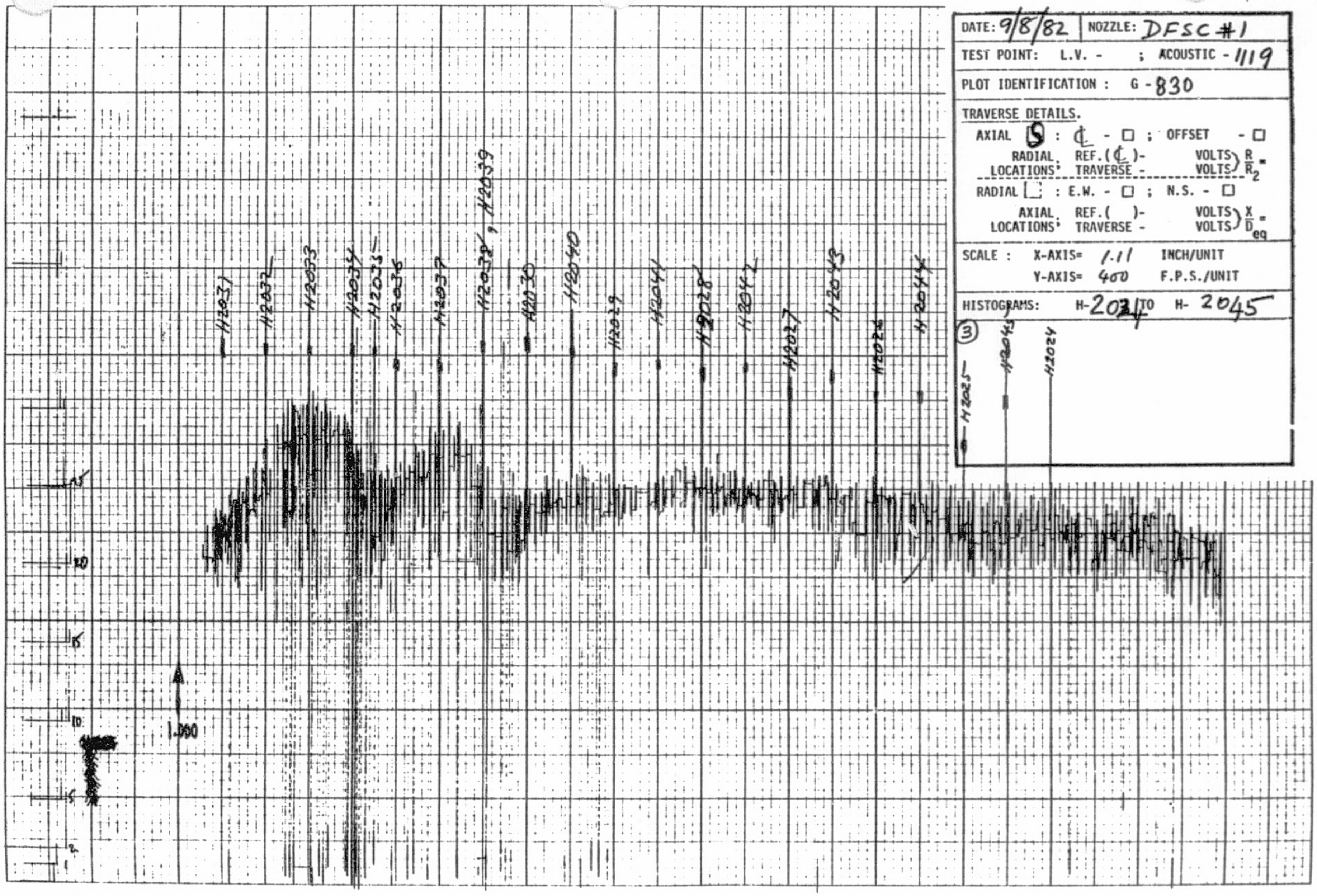

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BUFFALO, NEW YORK
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DATE: 9/10/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - 836

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) -7.053 VOLTS; TRAVERSE -7.053 VOLTS } $\frac{R}{R_2}$ = 0.0

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

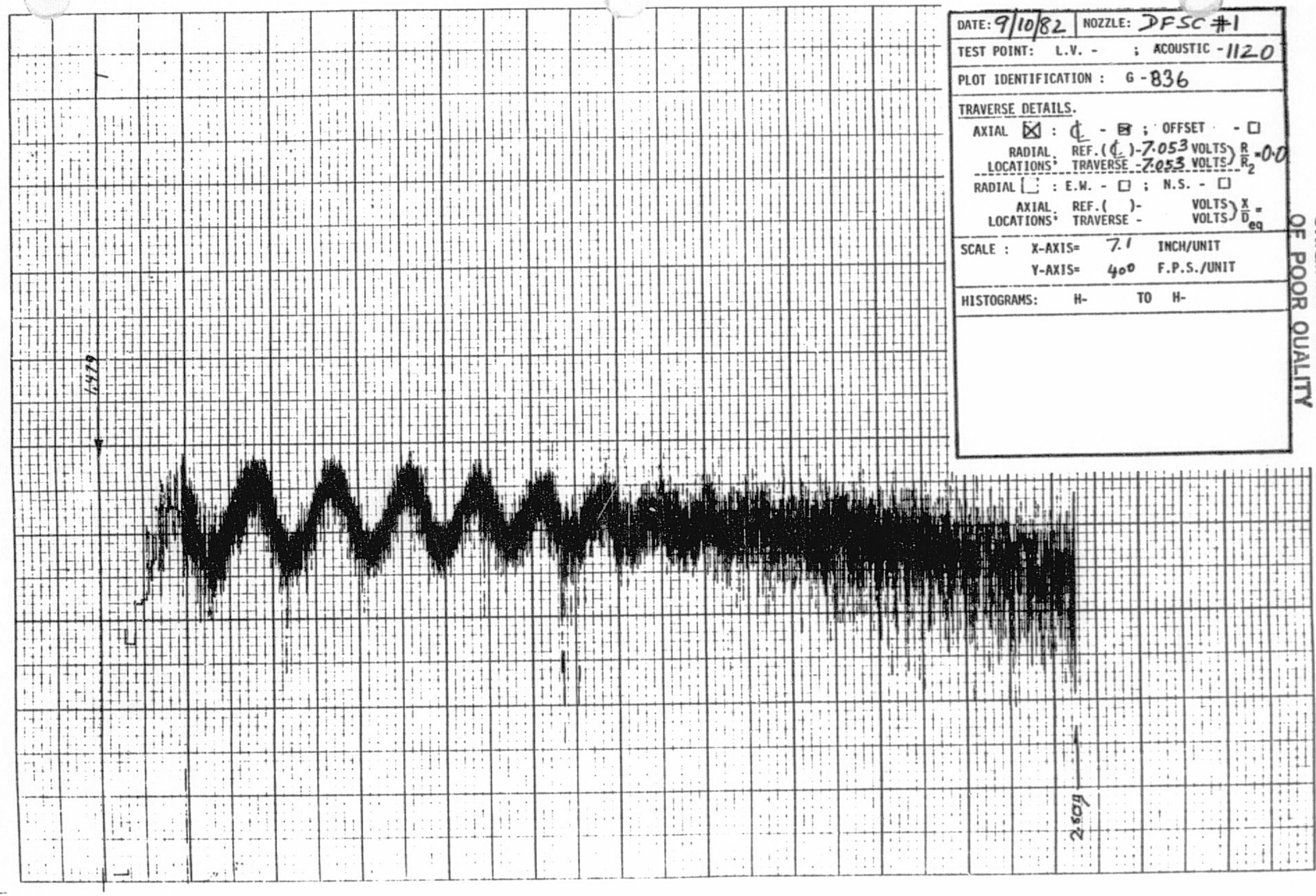
AXIAL LOCATIONS: REF. ( ) - VOLTS; TRAVERSE - VOLTS } $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS = 7.1 INCH/UNIT

Y-AXIS = 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

ORIGINAL PAGE IS OF POOR QUALITY



NO. XY 1101

725

DATE: 9/10/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G-837

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)-7.053 VOLTS; TRAVERSE -7.053 VOLTS; $\frac{R}{R_2}$ = 0.0

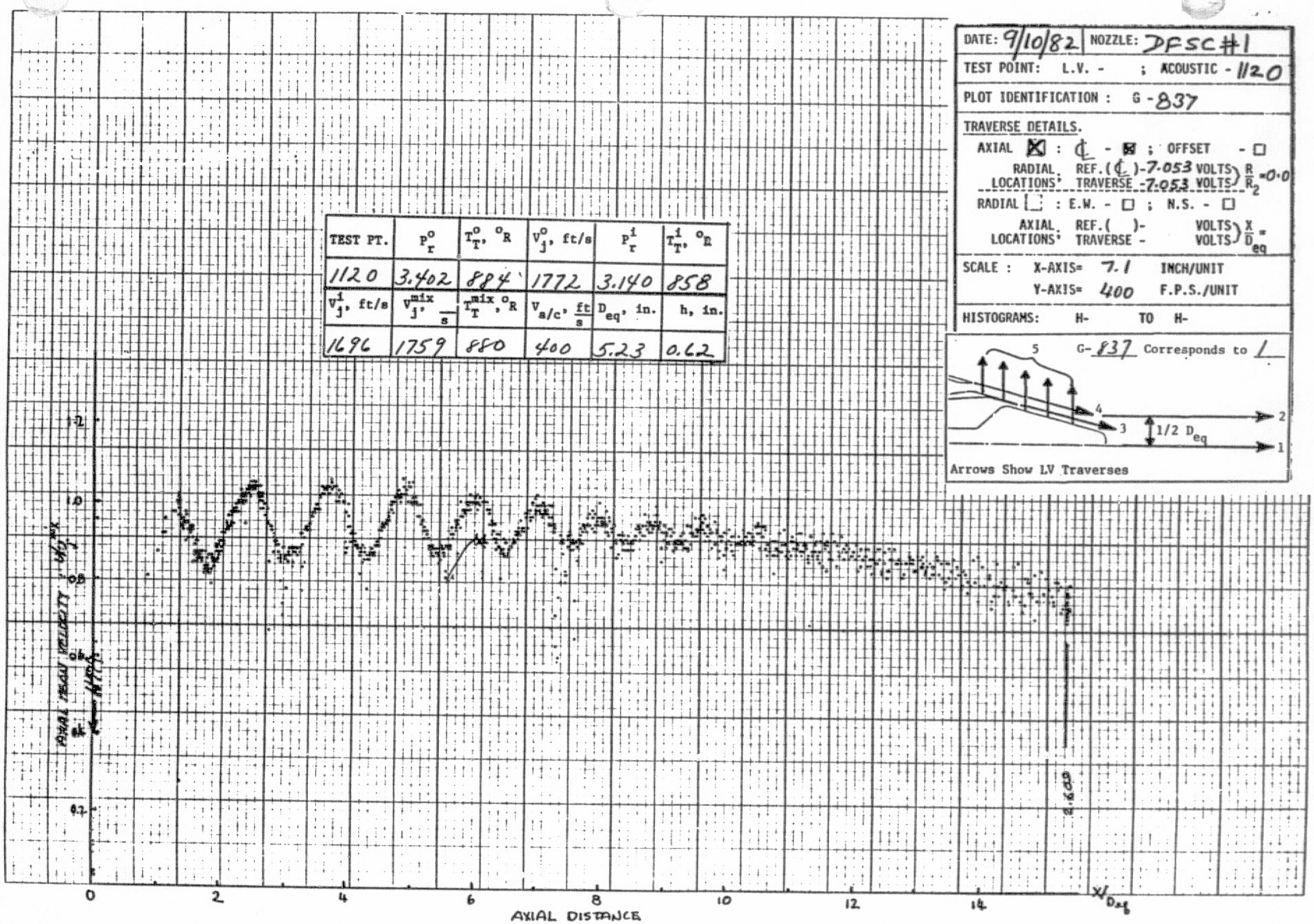
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT; Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



726

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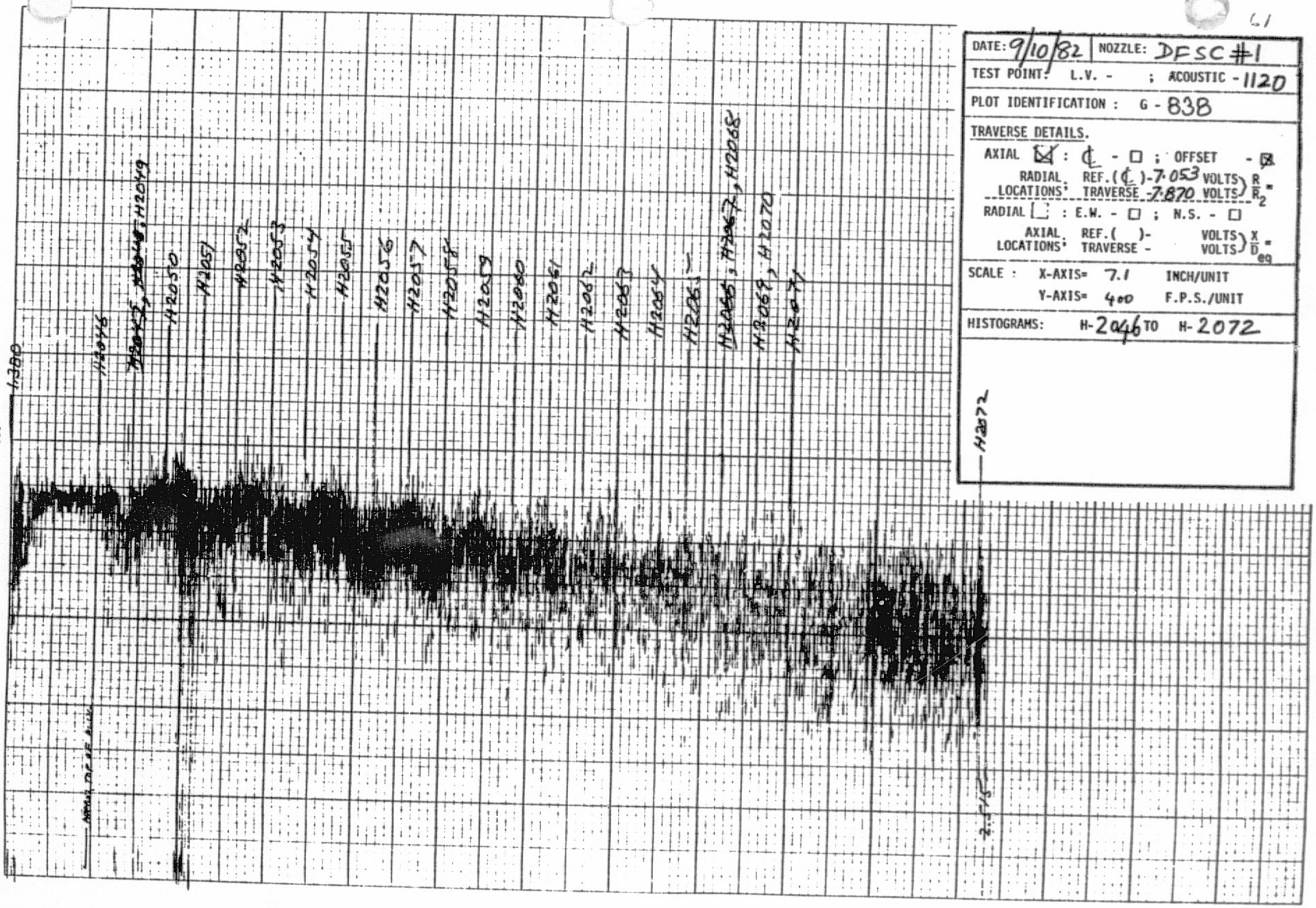
61



DATE: 9/10/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 838	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)-7.053 VOLTS; TRAVERSE -7.870 VOLTS } R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS } X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H-2046 TO H-2072

NO. XY 1101

DATE: 9/10/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 839	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄) - 7.053 VOLTS; TRAVERSE - 7.870 VOLTS } $\frac{R}{R_2}$ =

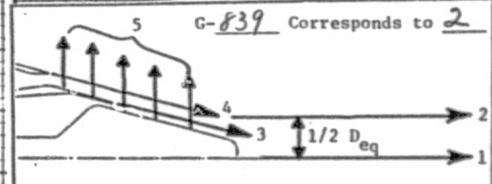
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - VOLTS; TRAVERSE - VOLTS } $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT; Y-AXIS= 400 F.P.S./UNIT

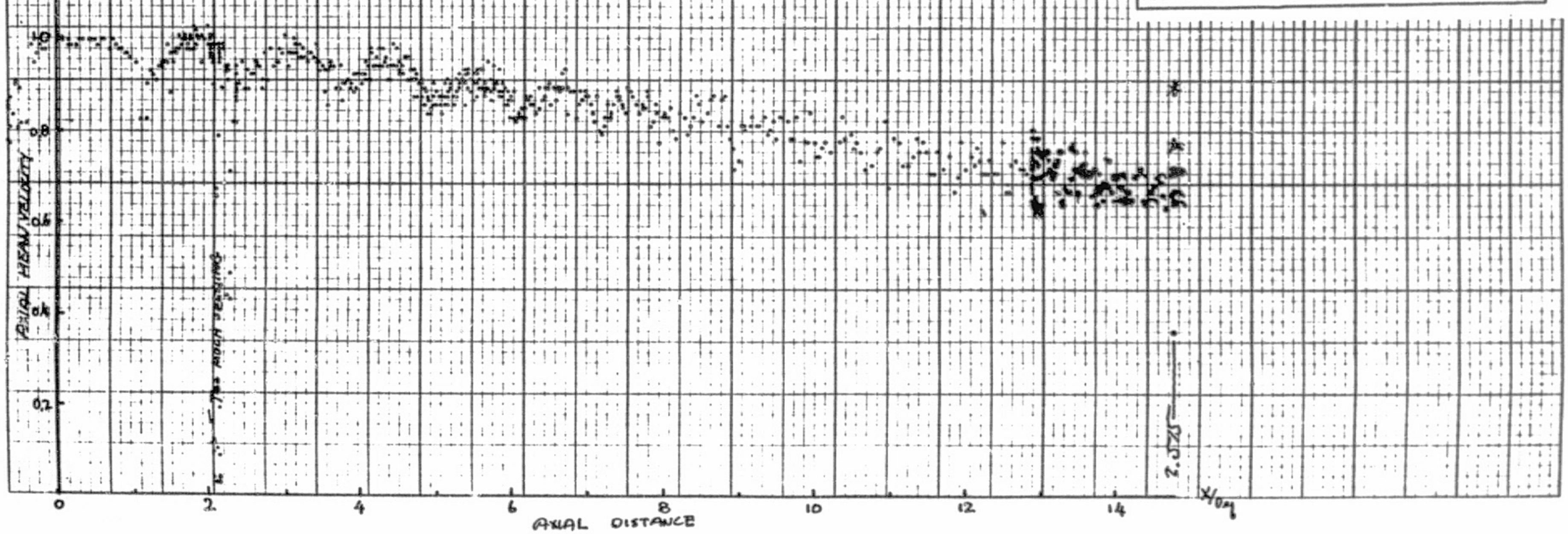
HISTOGRAMS: H- TO H-

G-839 Corresponds to 2



Arrows Show LV Traverses

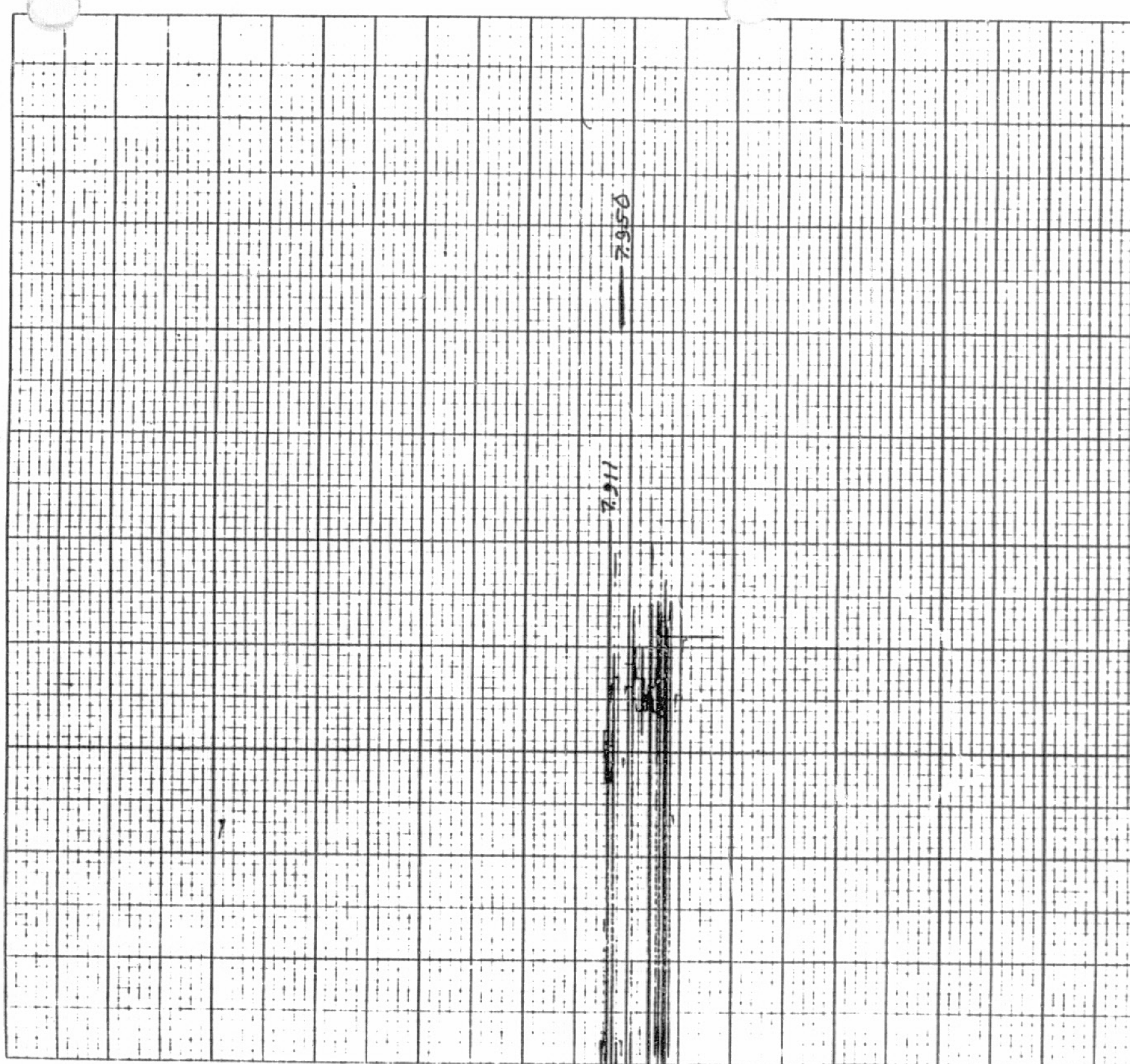
TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



No. XY 1101

728

DATE: 9/10/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC -1120	
PLOT IDENTIFICATION : G - 840	
TRAVERSE DETAILS.	
AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐	
RADIAL LOCATIONS: REF. (℄)- VOLTS; TRAVERSE - VOLTS $\frac{R}{R_2}$ =	
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐	
AXIAL LOCATIONS: REF. ( )- VOLTS; TRAVERSE -1.000 VOLTS $\frac{X}{D_{eq}}$ =	
SCALE : X-AXIS= 1.66 INCH/UNIT; Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



NO. XY 1101
729
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BUFFALO NEW YORK
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DATE: 9/10/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 841	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

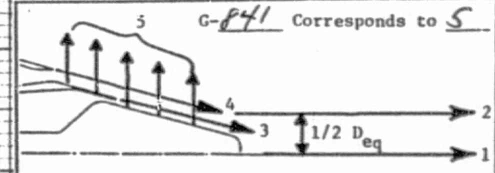
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - 1.000 VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

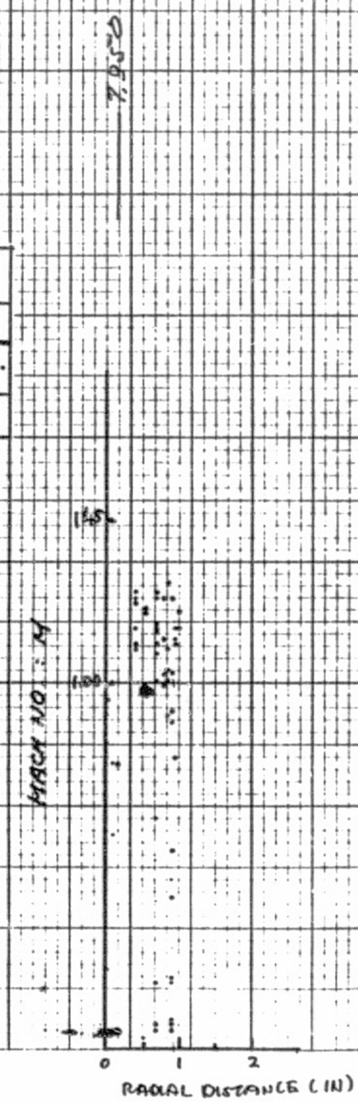
HISTOGRAMS: H- TO H-



G-841 Corresponds to 5

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



DATE: 9/10/82 NOZZLE: D F S C #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - 842

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

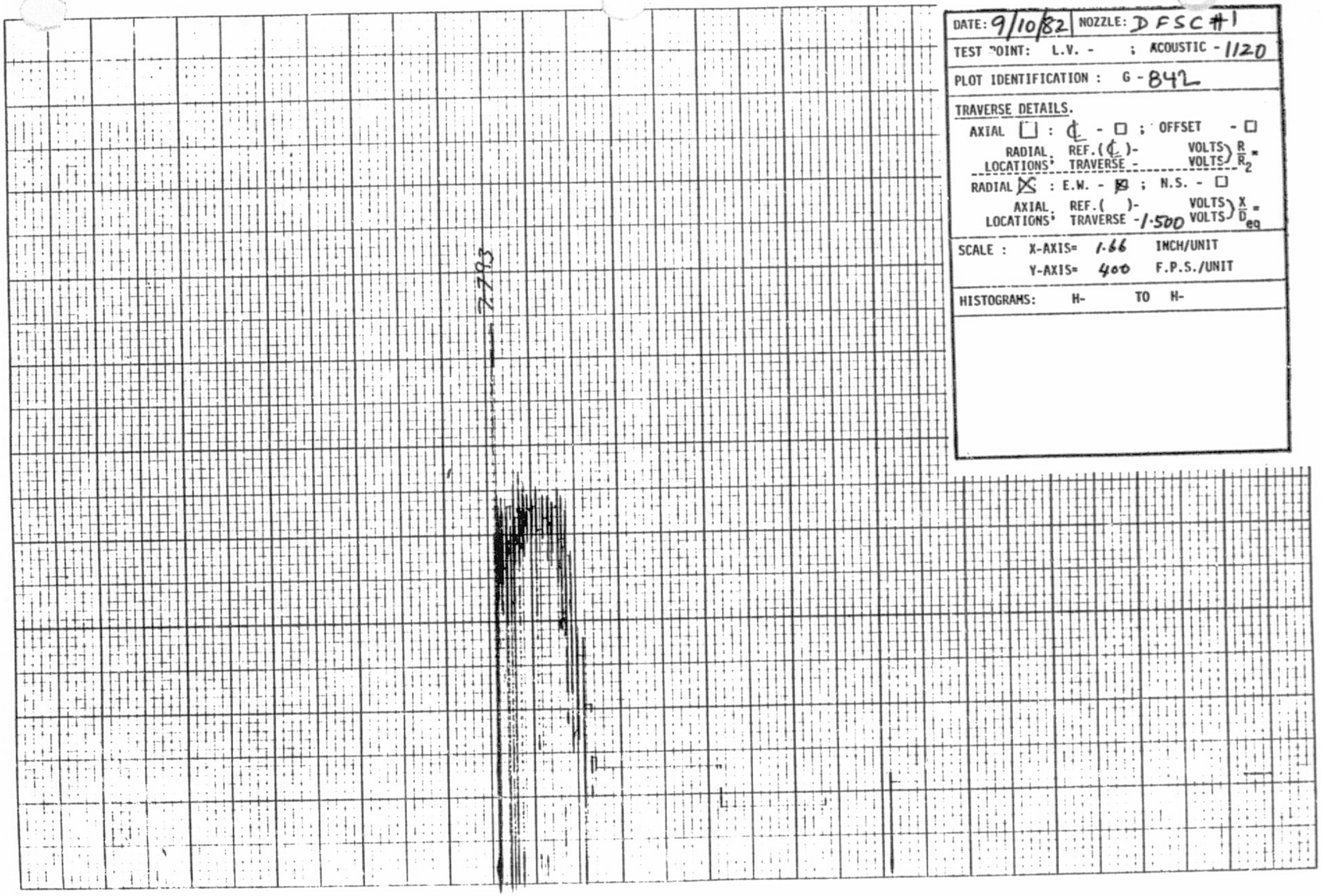
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - 1.500 VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



NO. XY 1101

731

DATE: 9/10/82 | NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - 843

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

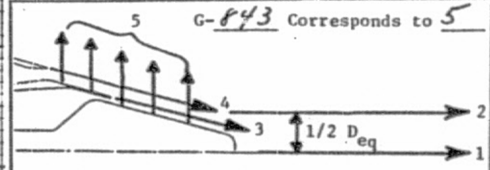
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - 1.500 VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

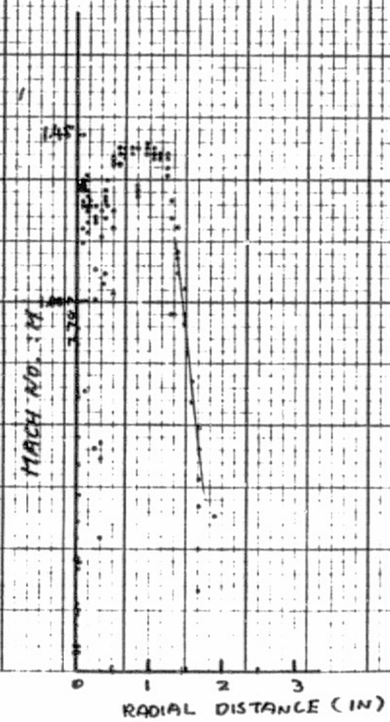
HISTOGRAMS: H- TO H-



G-843 Corresponds to 5

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



NO. XY 1101

732

RECORDING CHARTS

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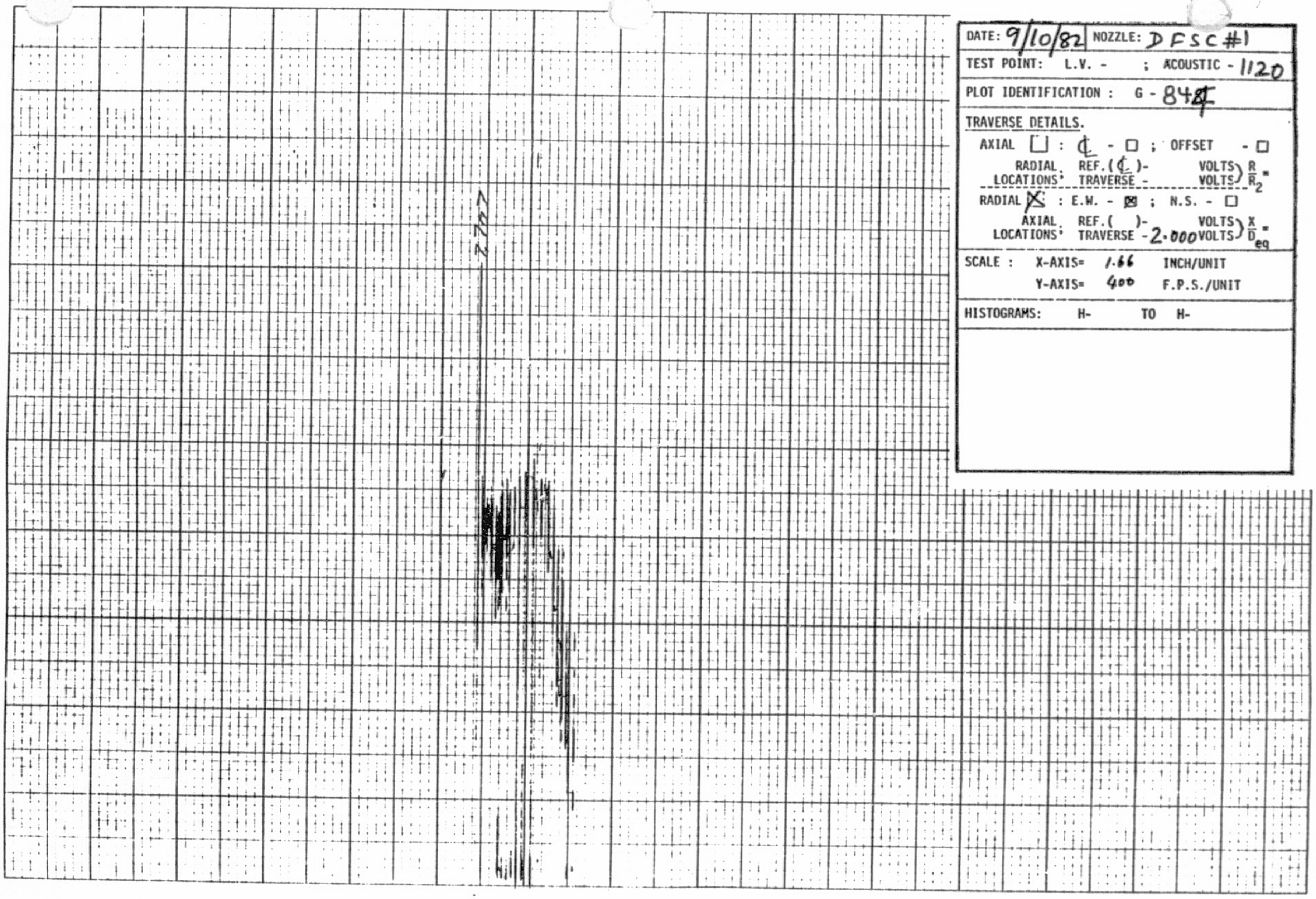

DATE: 9/10/82 NOZZLE: DFSC#1
TEST POINT: L.V. - ; ACOUSTIC - 1120
PLOT IDENTIFICATION : G - 845
TRAVERSE DETAILS.
AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R2 =
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
AXIAL LOCATIONS: REF.( )- TRAVERSE - 2.000 VOLTS/VOLTS) X/Deq =
SCALE : X-AXIS= 1.66 INCH/UNIT
Y-AXIS= 400 F.P.S./UNIT
HISTOGRAMS: H- TO H-

DATE: 9/10/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 845	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

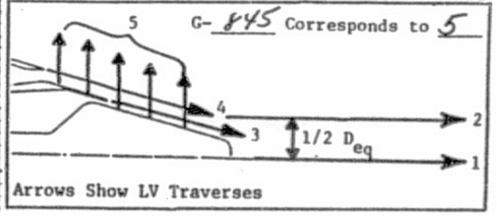
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - 2.000 VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

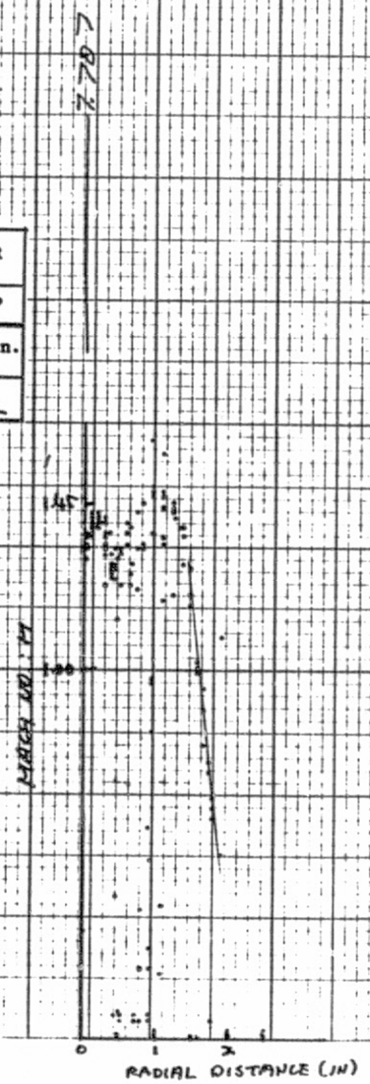
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, $\frac{}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



NO. XY 1101

734

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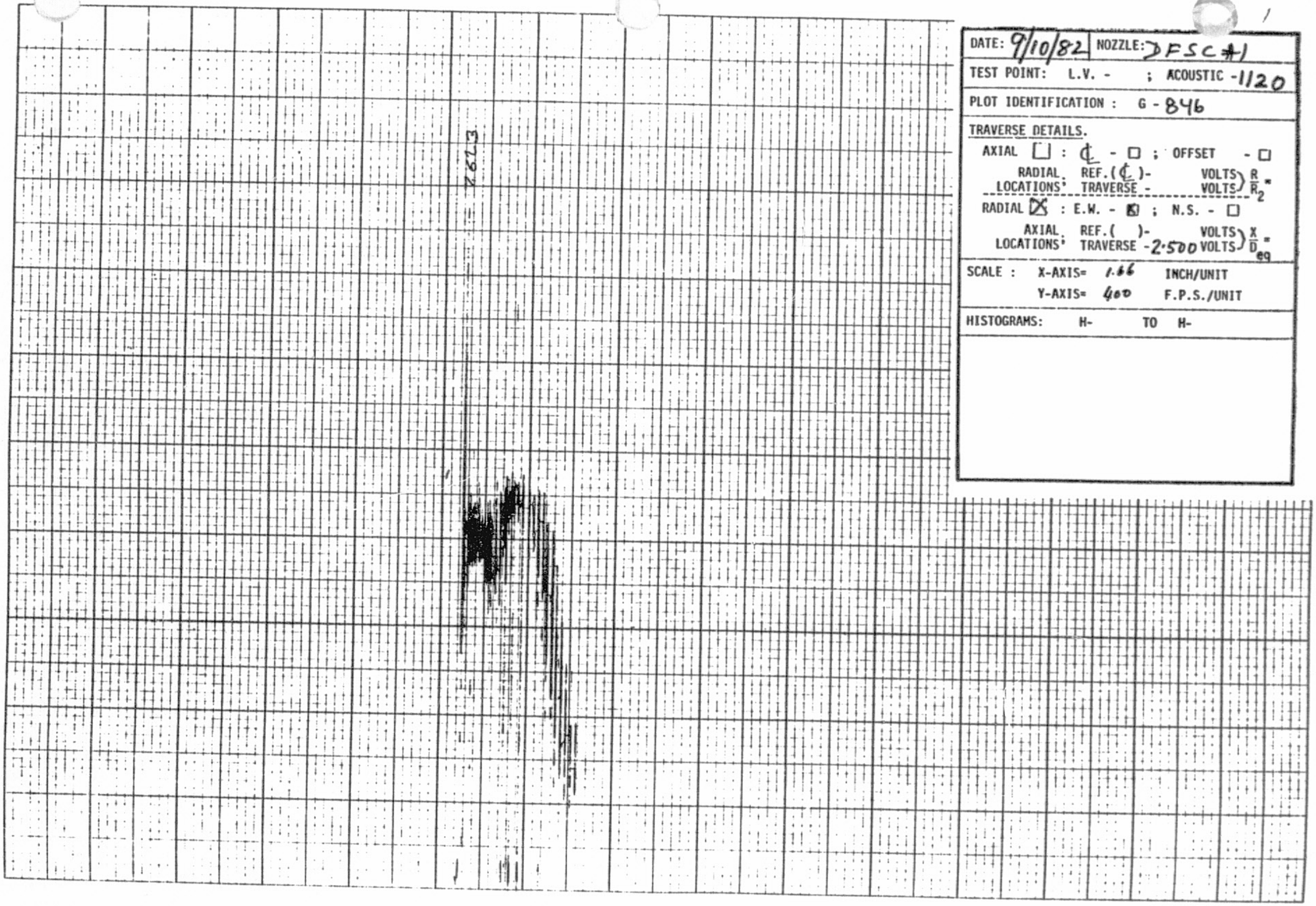


DATE: 9/10/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC -1120

PLOT IDENTIFICATION : G - 846

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE -2.500 VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

235

DATE: 9/10/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - 847

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - VOLTS; TRAVERSE - VOLTS } $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - VOLTS; TRAVERSE - 2.500 VOLTS } $\frac{X}{D_{eq}}$ =

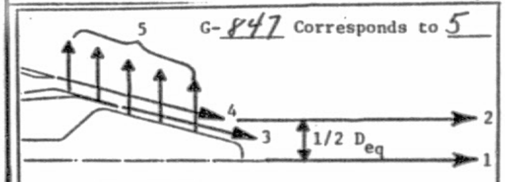
SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

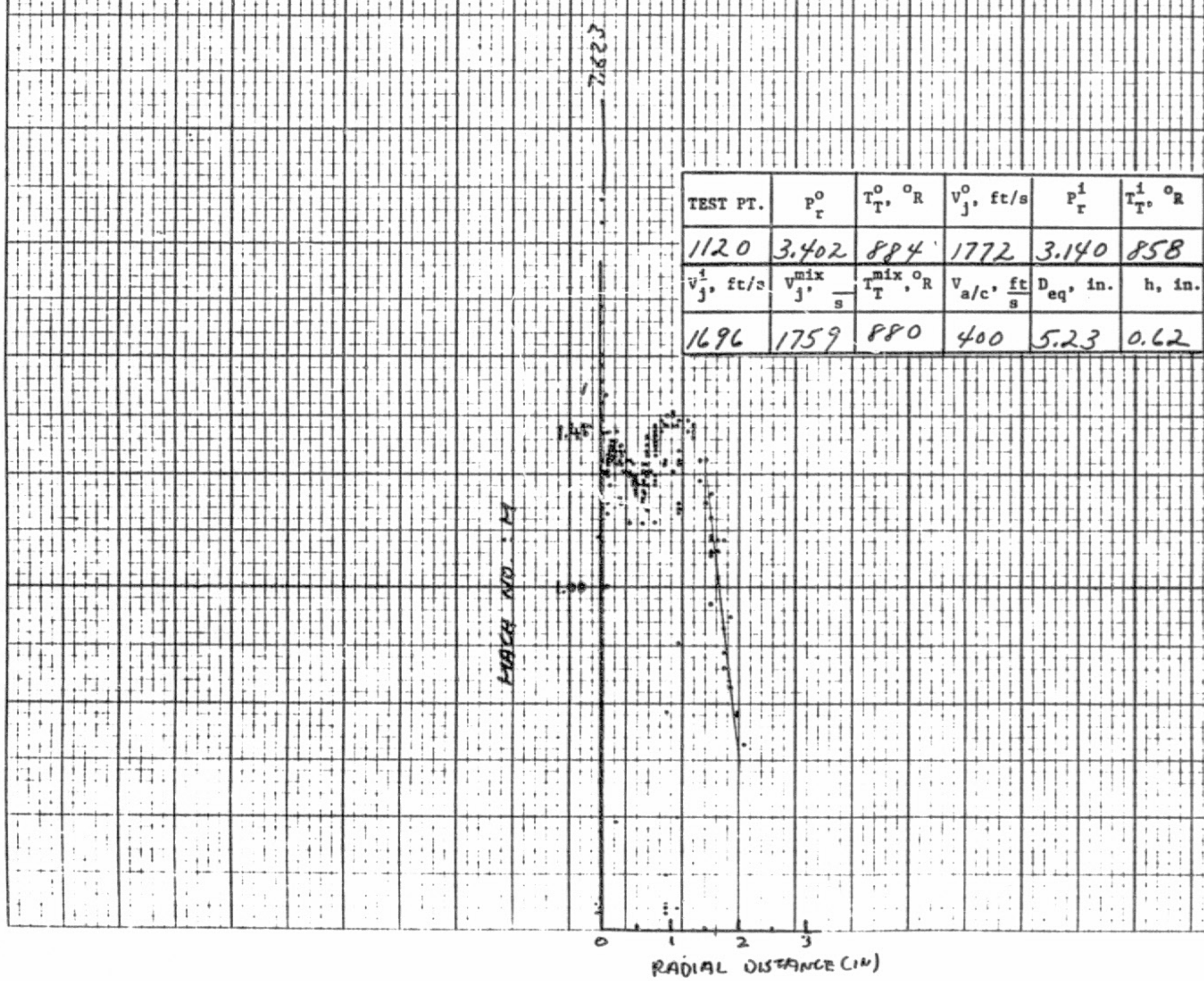
HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62

G-847 Corresponds to 5



Arrows Show LV Traverses



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DATE: 9/10/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - 84B

TRAVERSE DETAILS.

AXIAL [ ] : ℄ - [ ] ; OFFSET - [ ]

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS) VOLTS) $\frac{R}{R_2}$ =

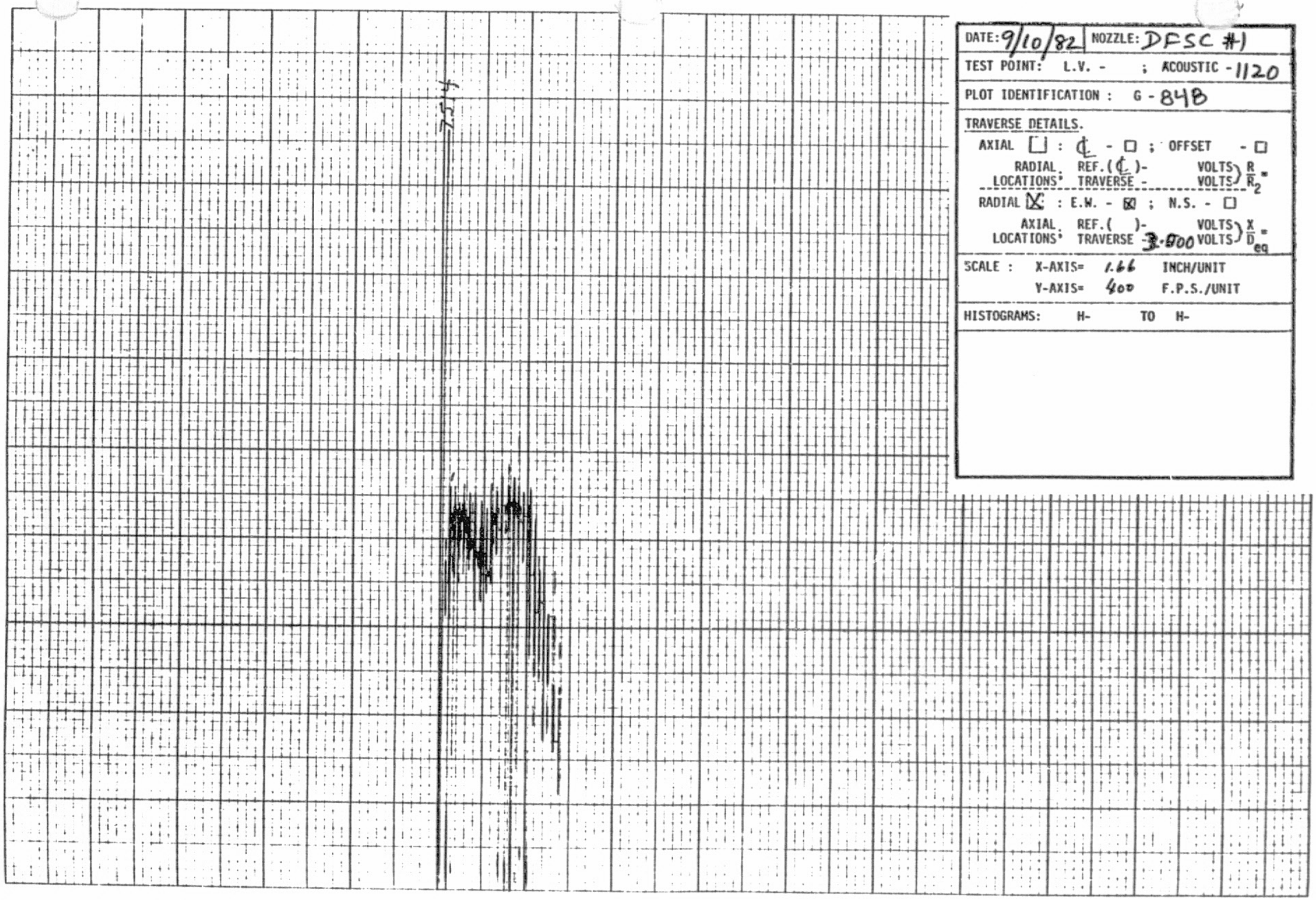
RADIAL [X] : E.W. - [X] ; N.S. - [ ]

AXIAL LOCATIONS: REF.( )- TRAVERSE - 3.000 VOLTS) VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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737

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738

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DATE: 9/10/82	NOZZLE: DFSC#1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 849	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

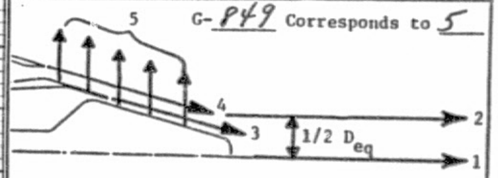
AXIAL LOCATIONS: REF. ( )- TRAVERSE 3.000 VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

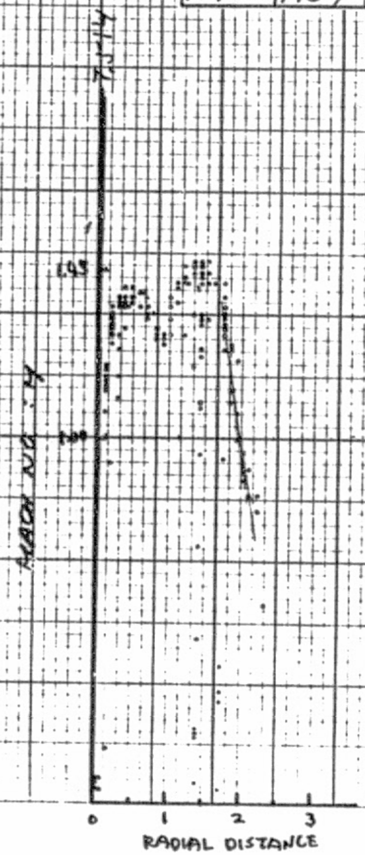
HISTOGRAMS: H- TO H-

G-849 Corresponds to 5



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



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DATE: 9/10/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 850	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

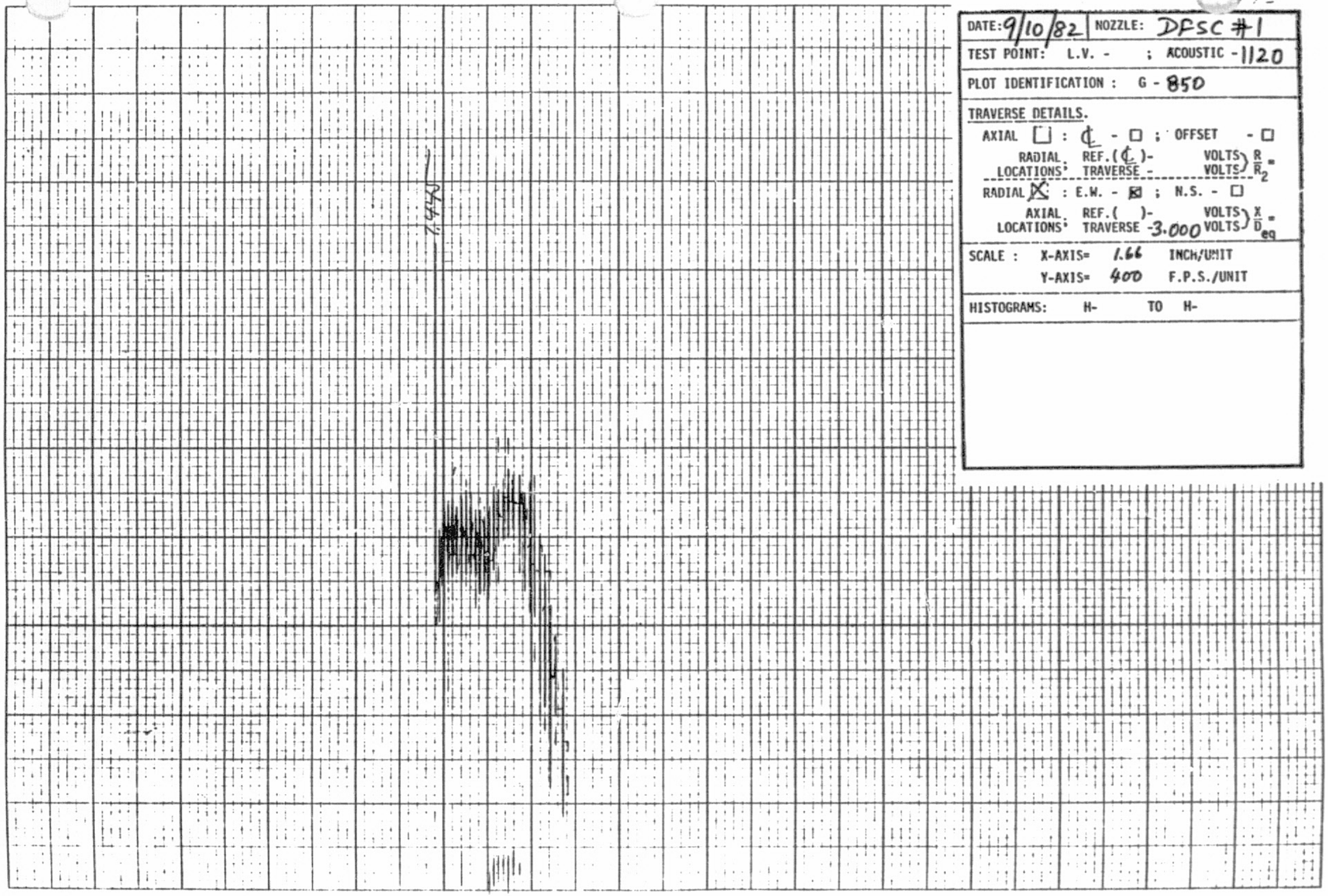
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE -3.000 VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



NO. XY 1101

739

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DATE: 9/10/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 851	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

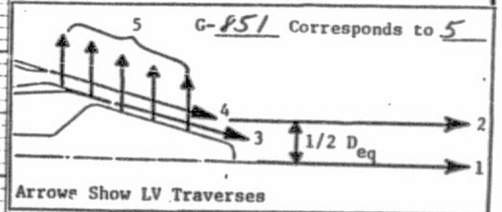
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE -3.500 VOLTS/VOLTS) X/D_{eq} =

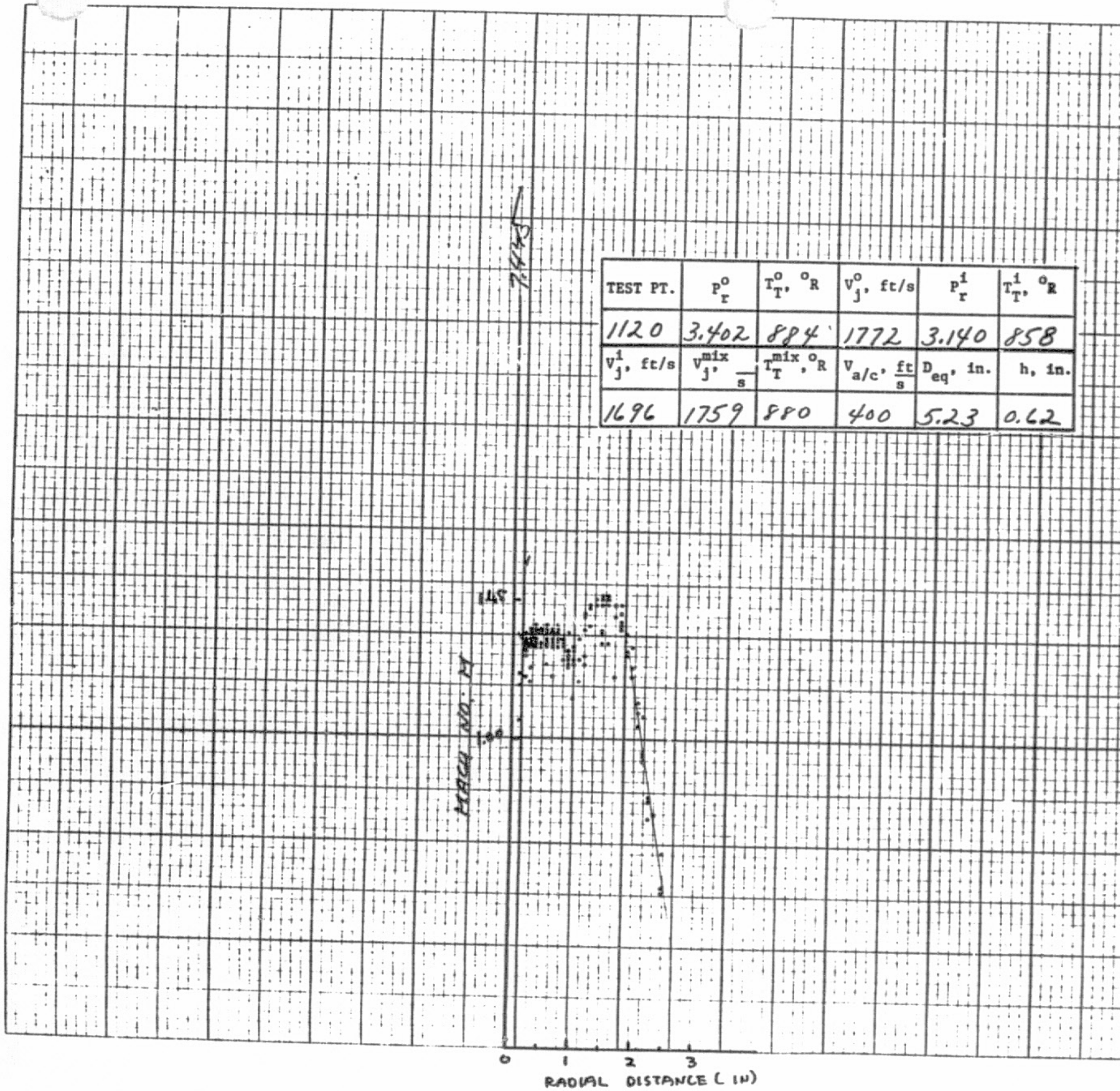
SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



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740 RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

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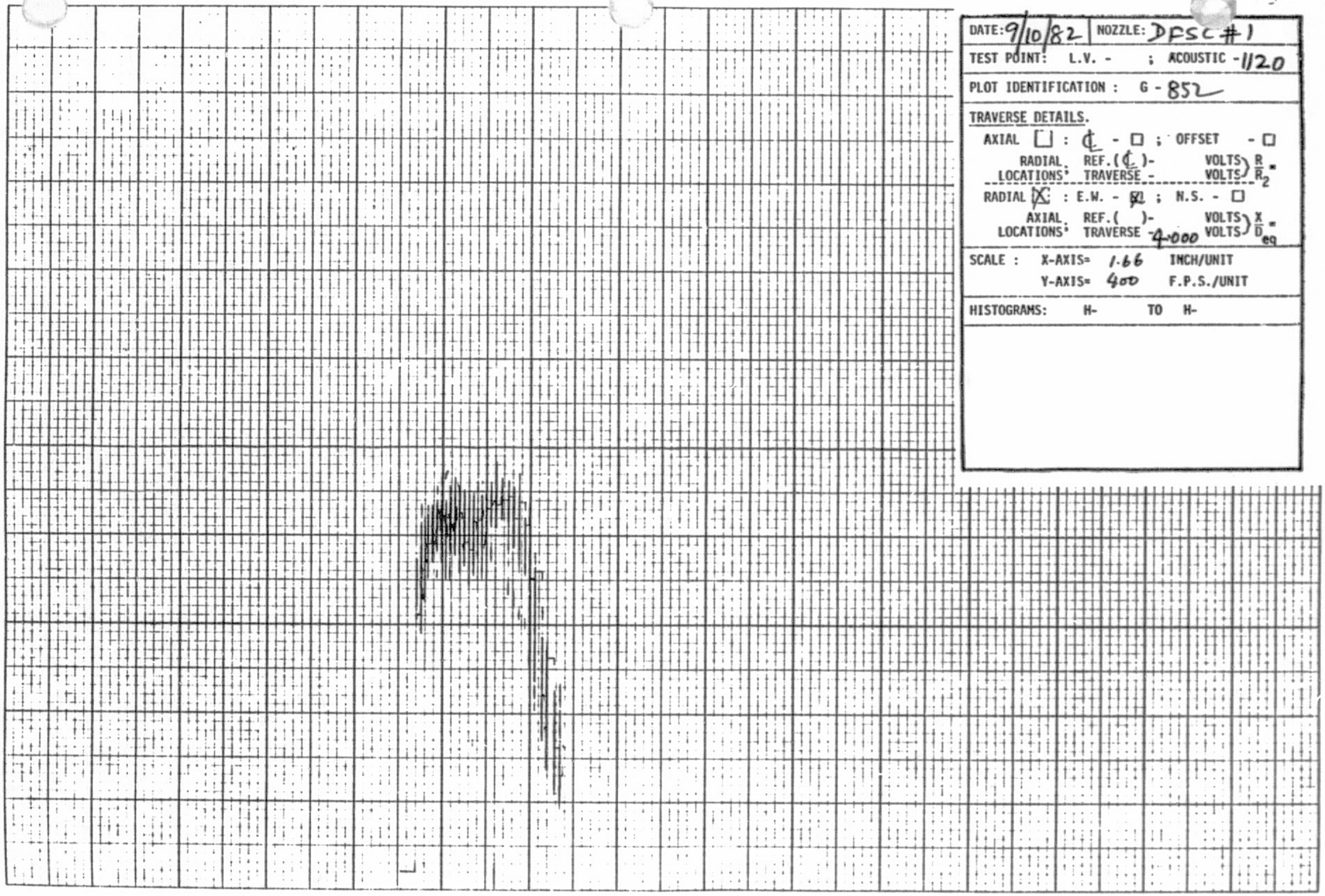


DATE: 9/10/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 852	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - VOLTS; TRAVERSE - VOLTS; $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - VOLTS; TRAVERSE - 4.000 VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS = 1.66 INCH/UNIT

Y-AXIS = 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

741

DATE: 9/10/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - 853

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

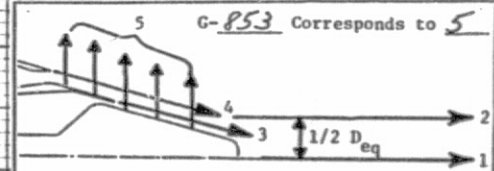
AXIAL LOCATIONS: REF.( )- TRAVERSE - 4.000 VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

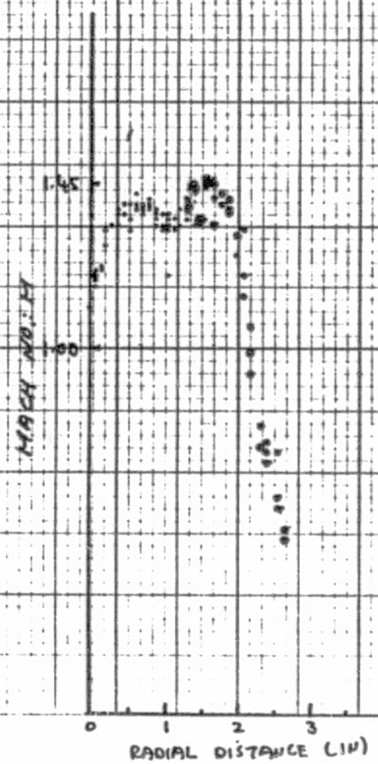
HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



G-853 Corresponds to 5

Arrows Show LV Traverses



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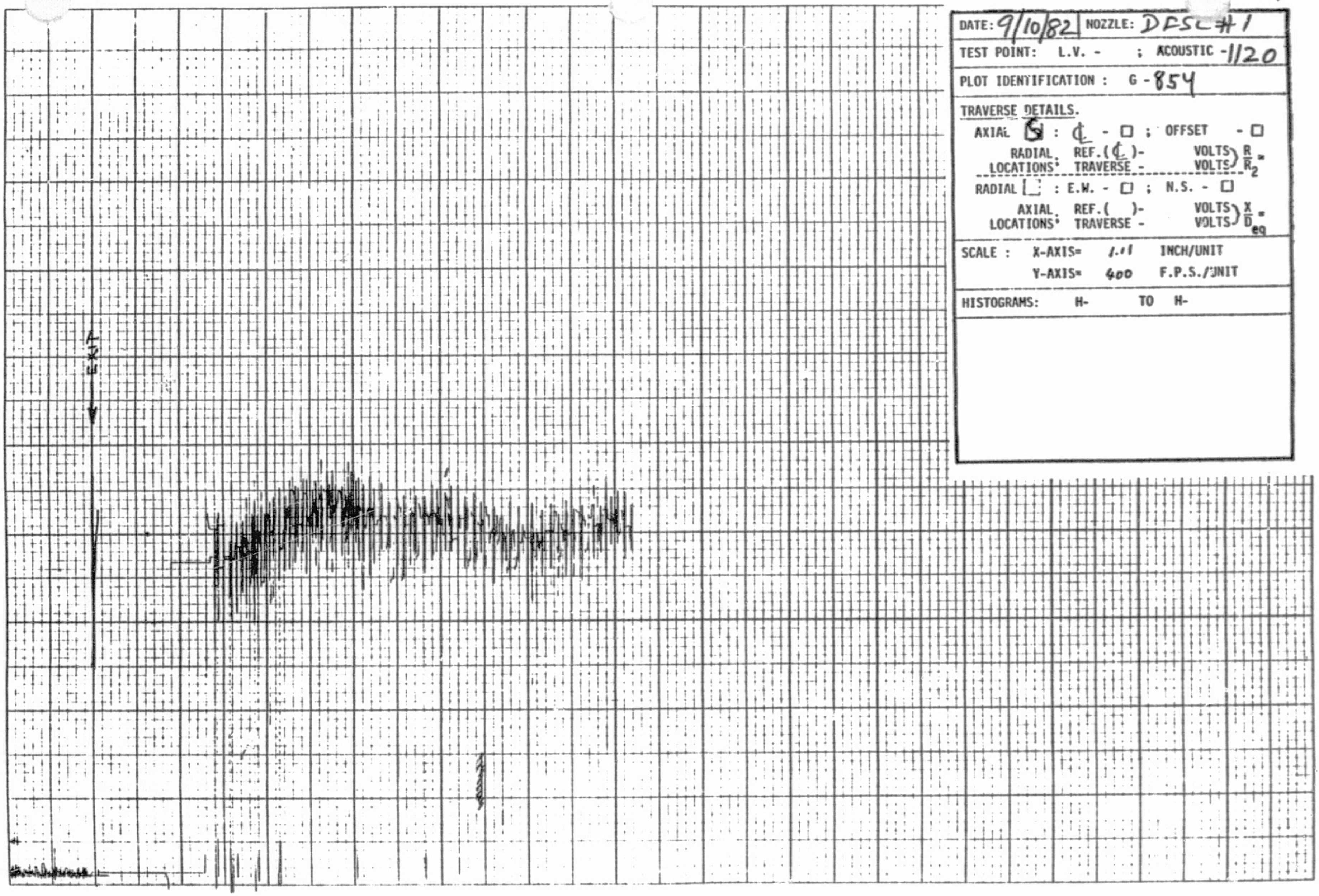

DATE: 9/10/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - 854

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

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BUFFALO, NEW YORK

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DATE: 9/10/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - 855

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

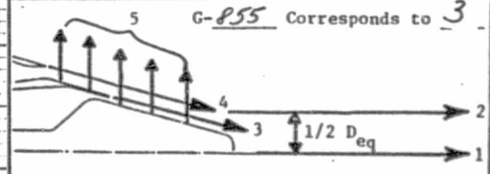
AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

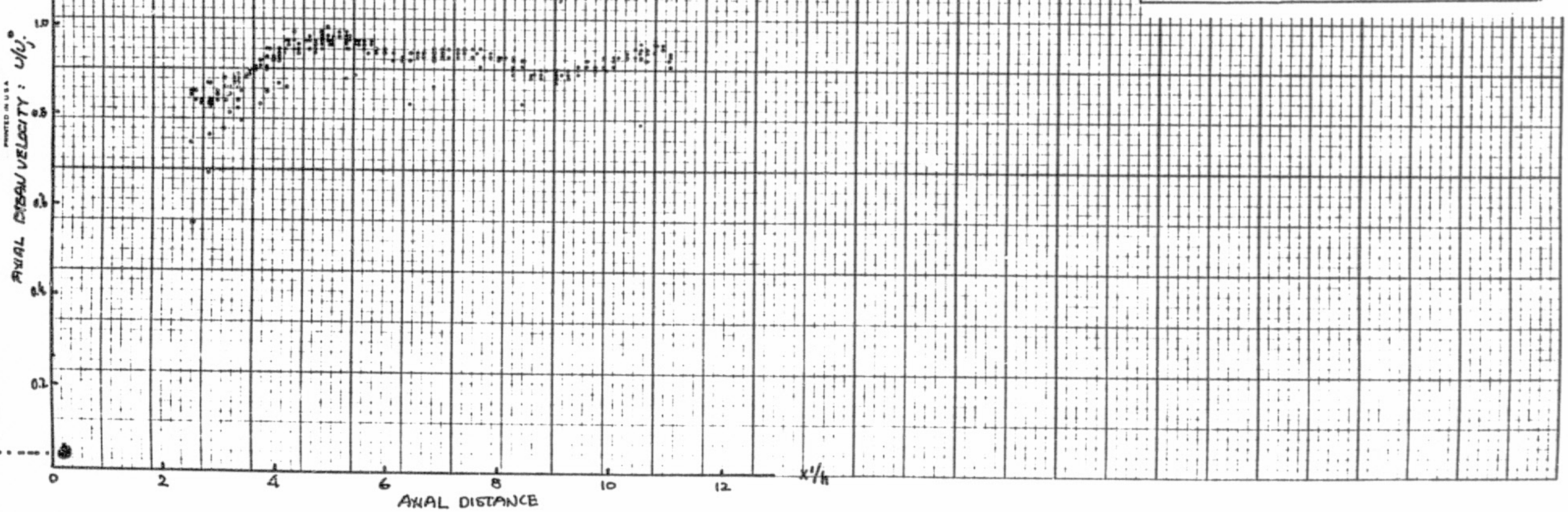
HISTOGRAMS: H- TO H-

G-855 Corresponds to 3



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



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744

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DATE: 9/10/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 856	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

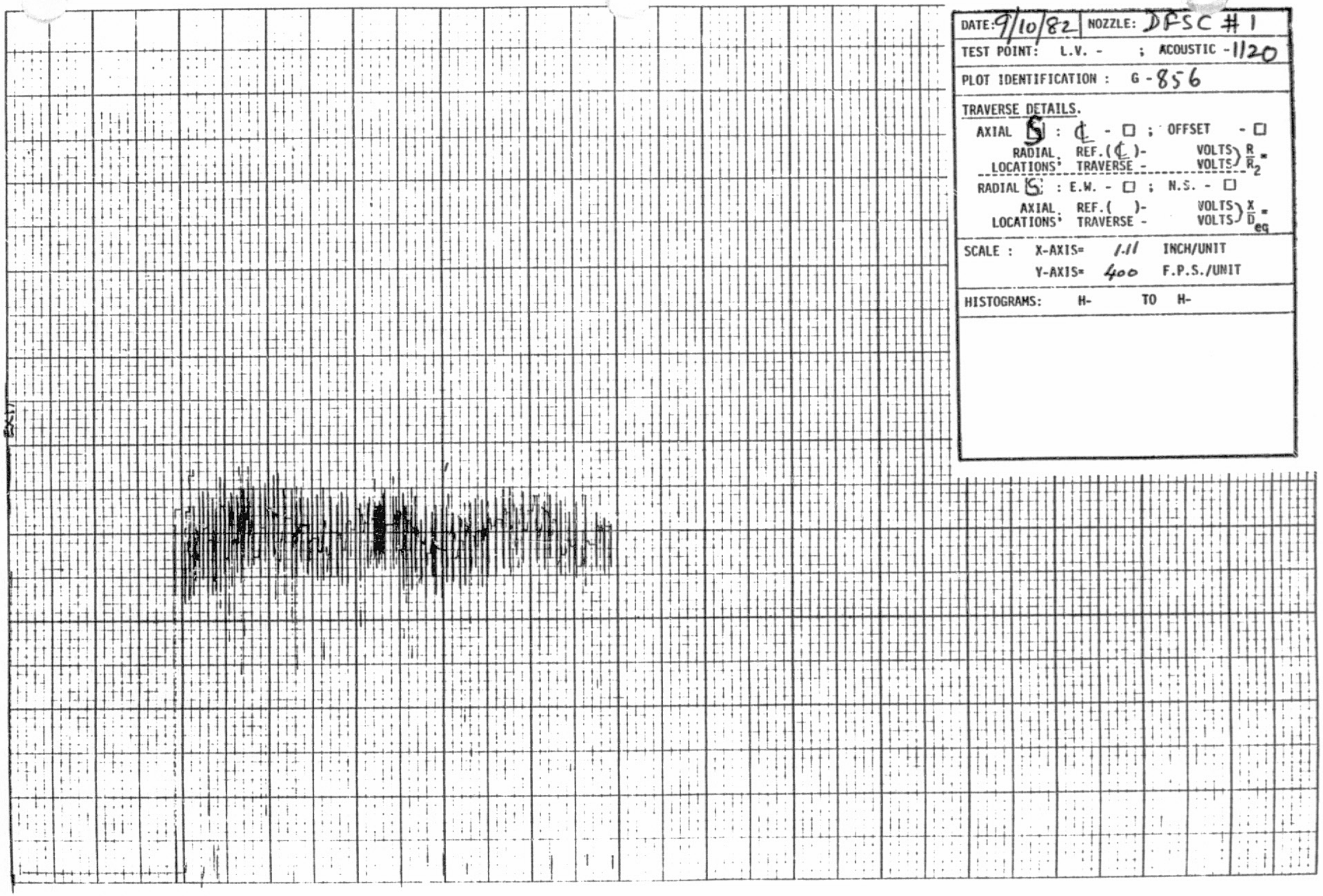
RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. (   ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS = 1.11 INCH/UNIT

Y-AXIS = 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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DATE: 9/10/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 857	

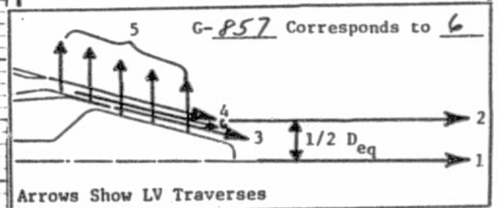
TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

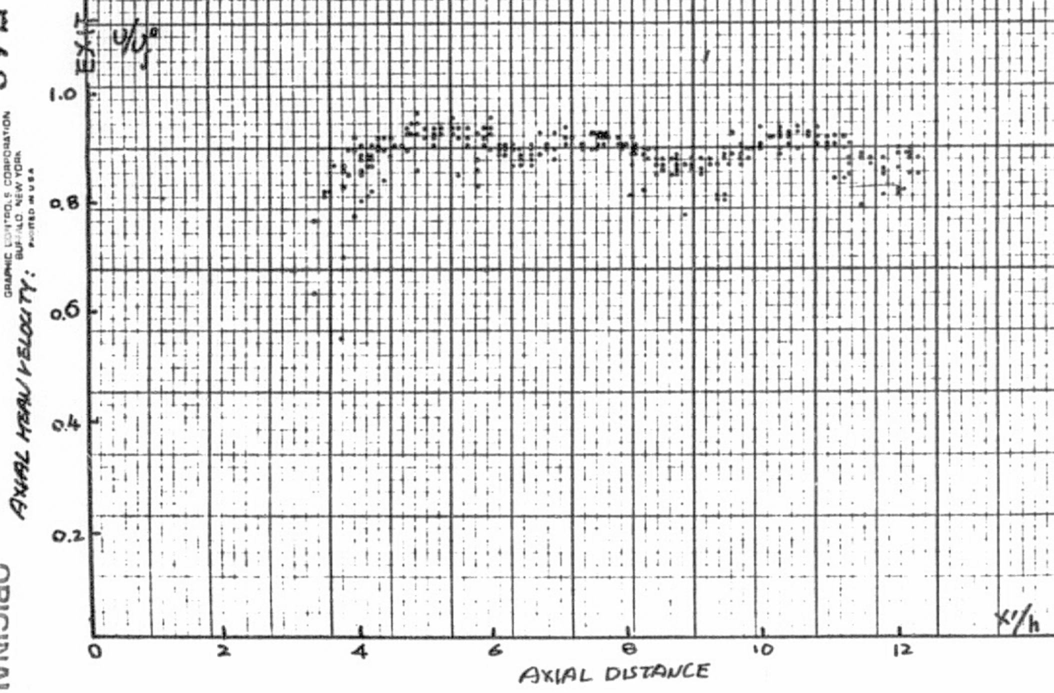
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



DATE: 9/10/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - B58

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- VOLTS, TRAVERSE - VOLTS; $\frac{R}{R_2}$ =

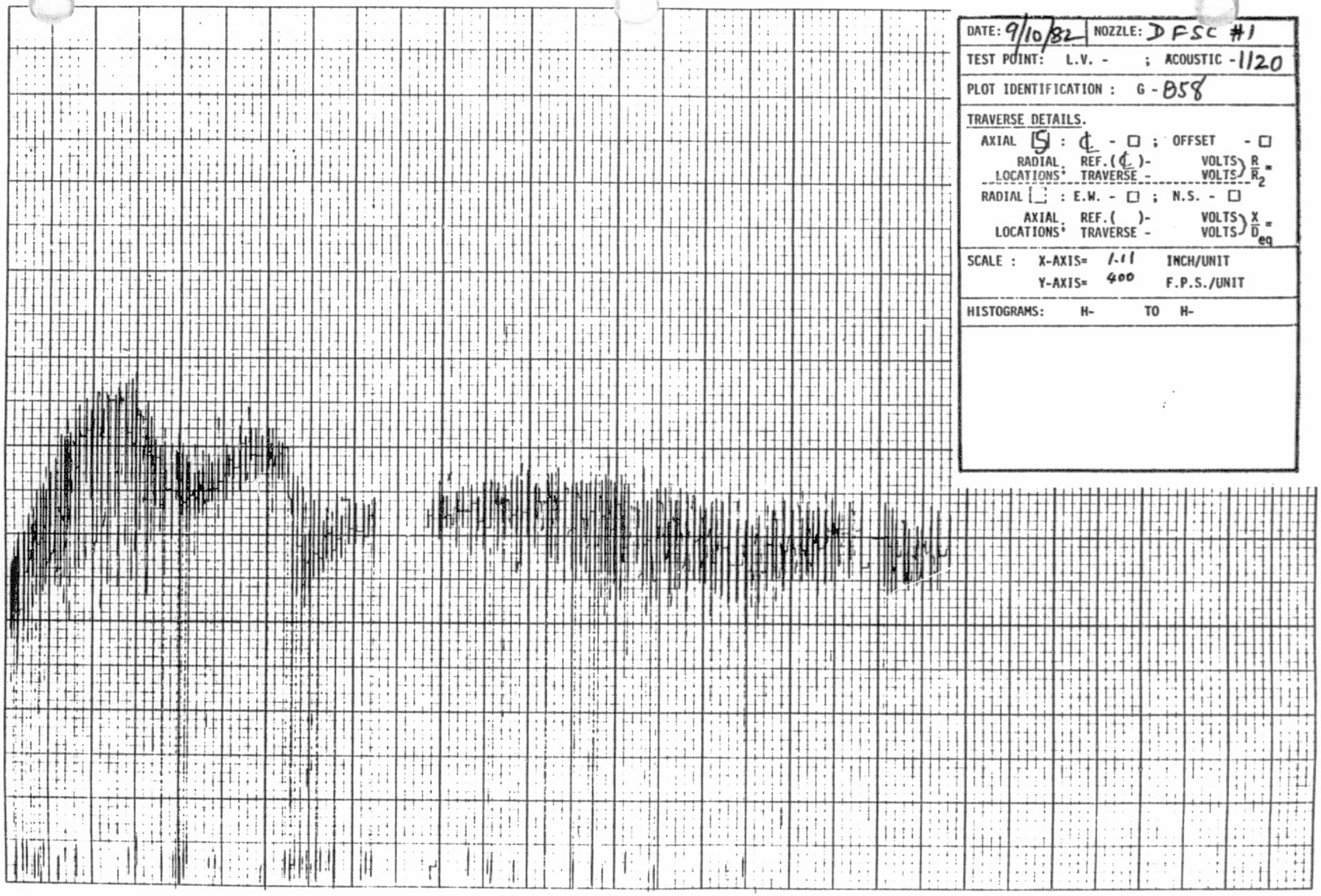
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS, TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



DATE: 9/10/82 NOZZLE: DFSC#1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G-859

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

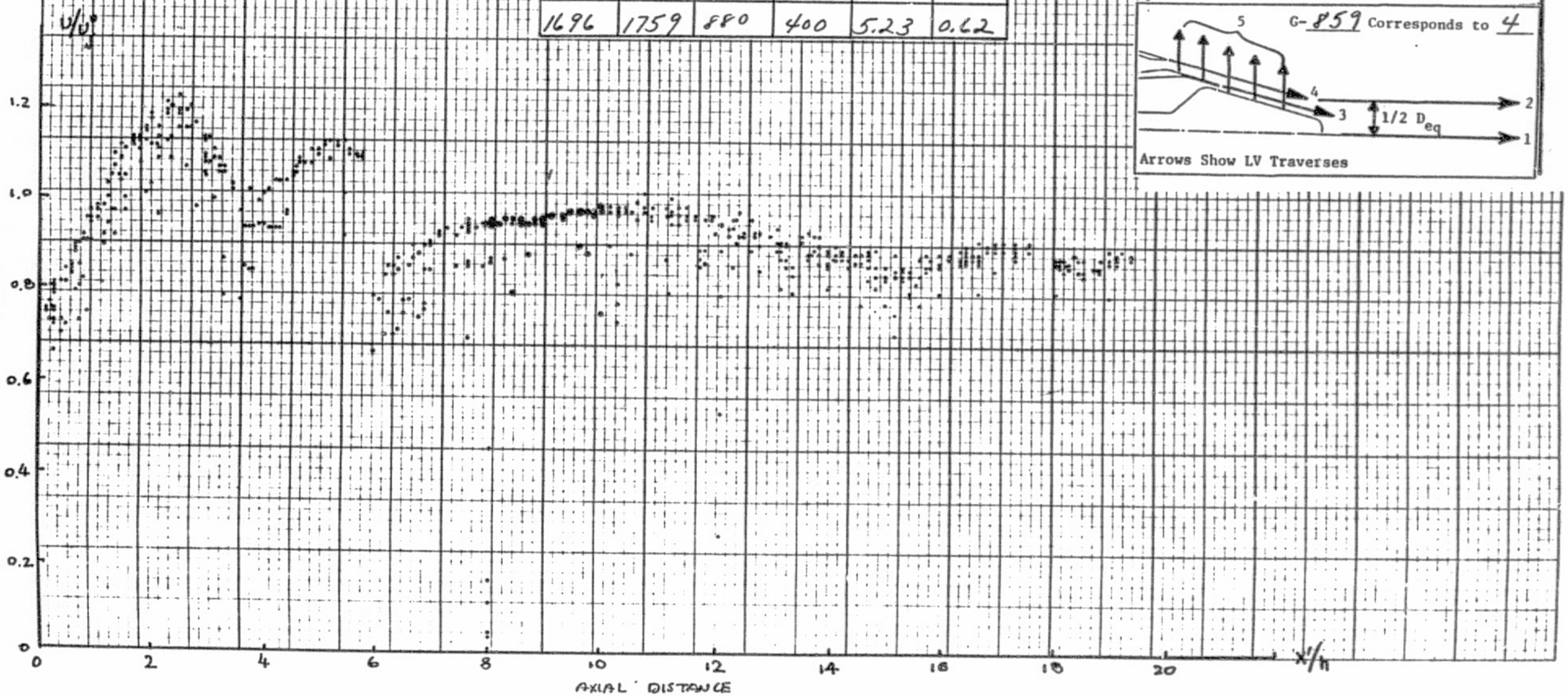
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



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748

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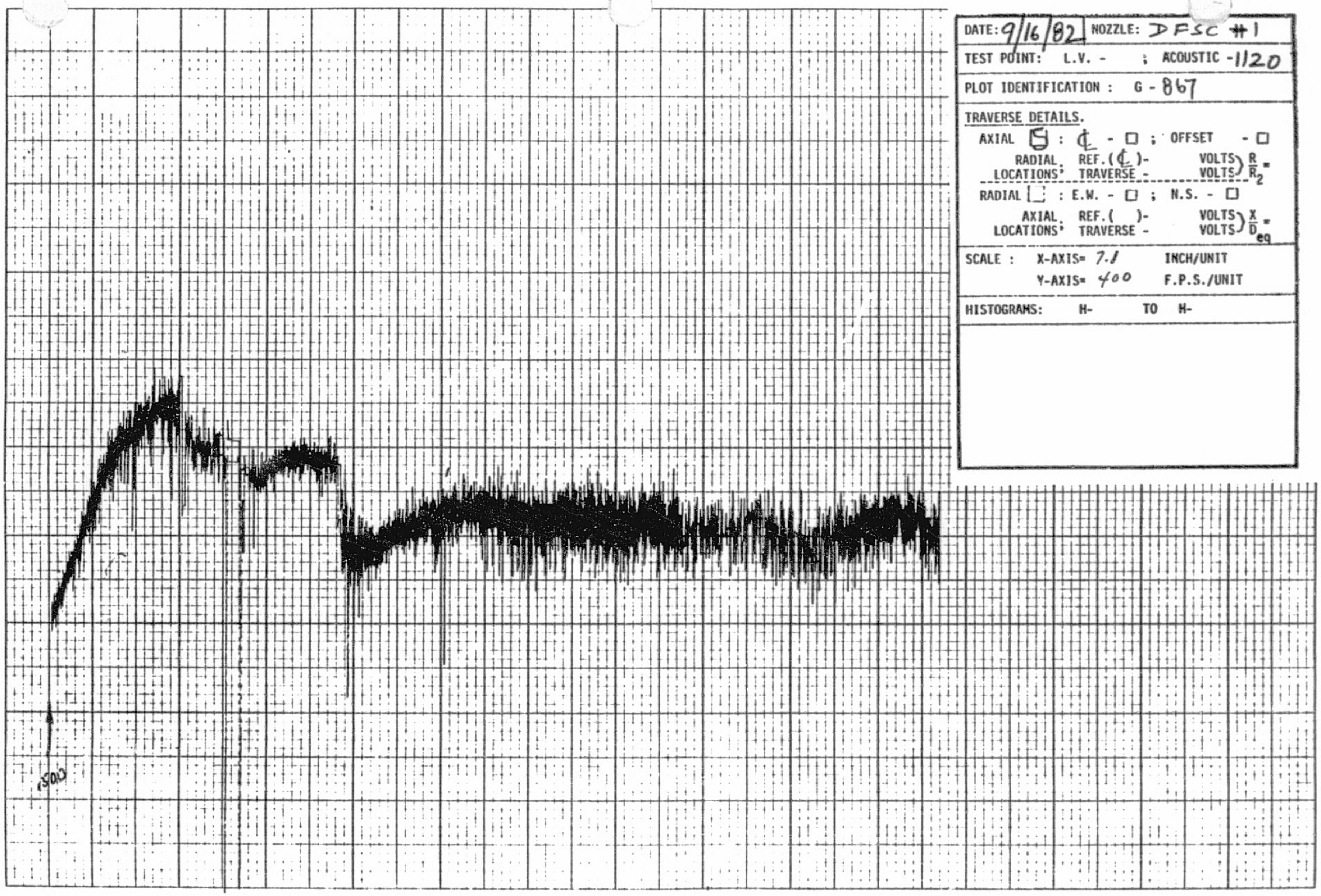

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NO. XY 1101

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DATE: 9/16/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - 868

TRAVERSE DETAILS.

AXIAL [✓] : ℄ - □ ; OFFSET - □

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL [ ] : E.W. - □ ; N.S. - □

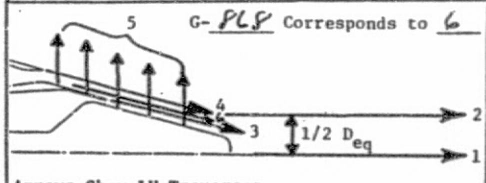
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

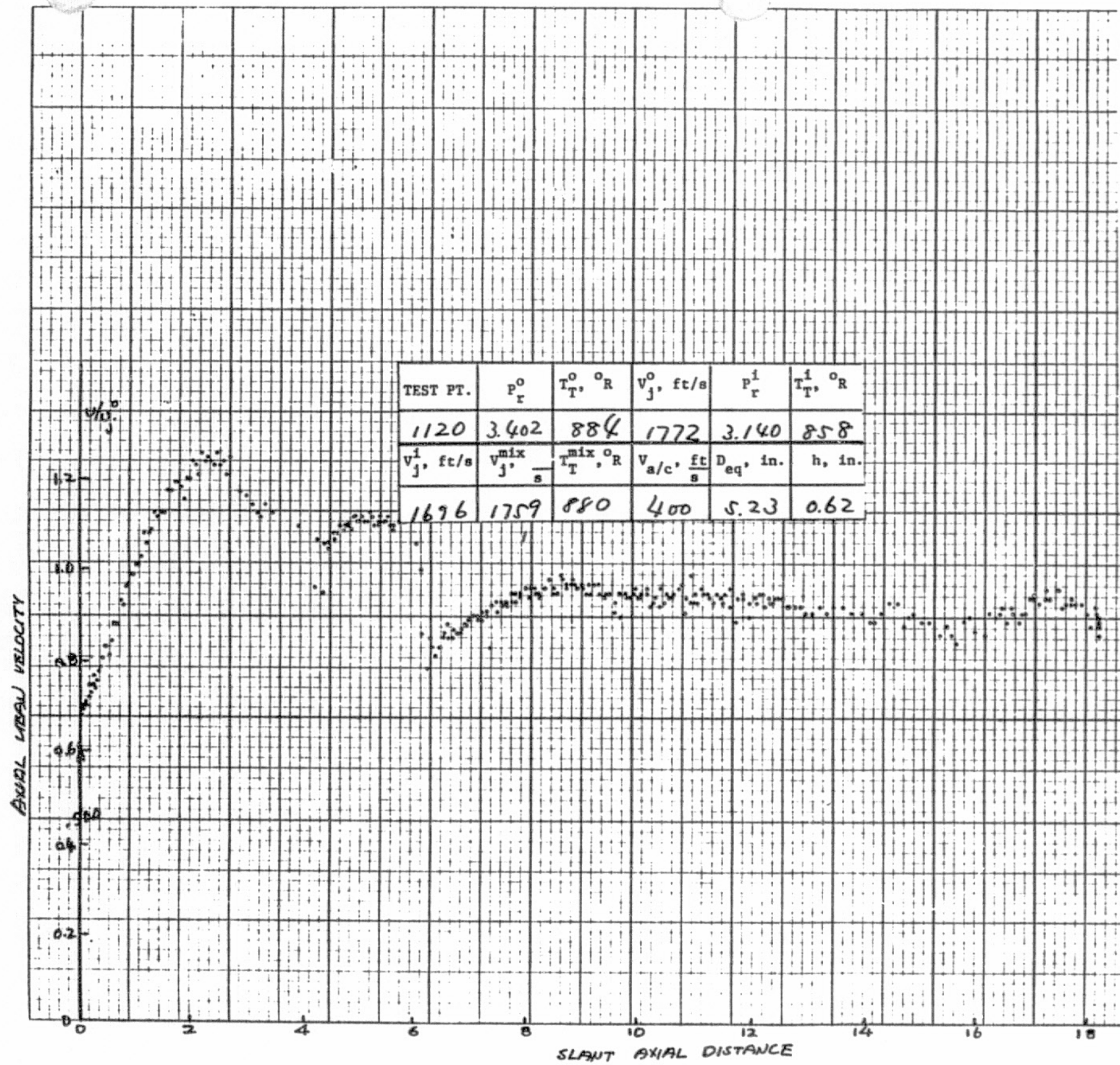
HISTOGRAMS: H- TO H-

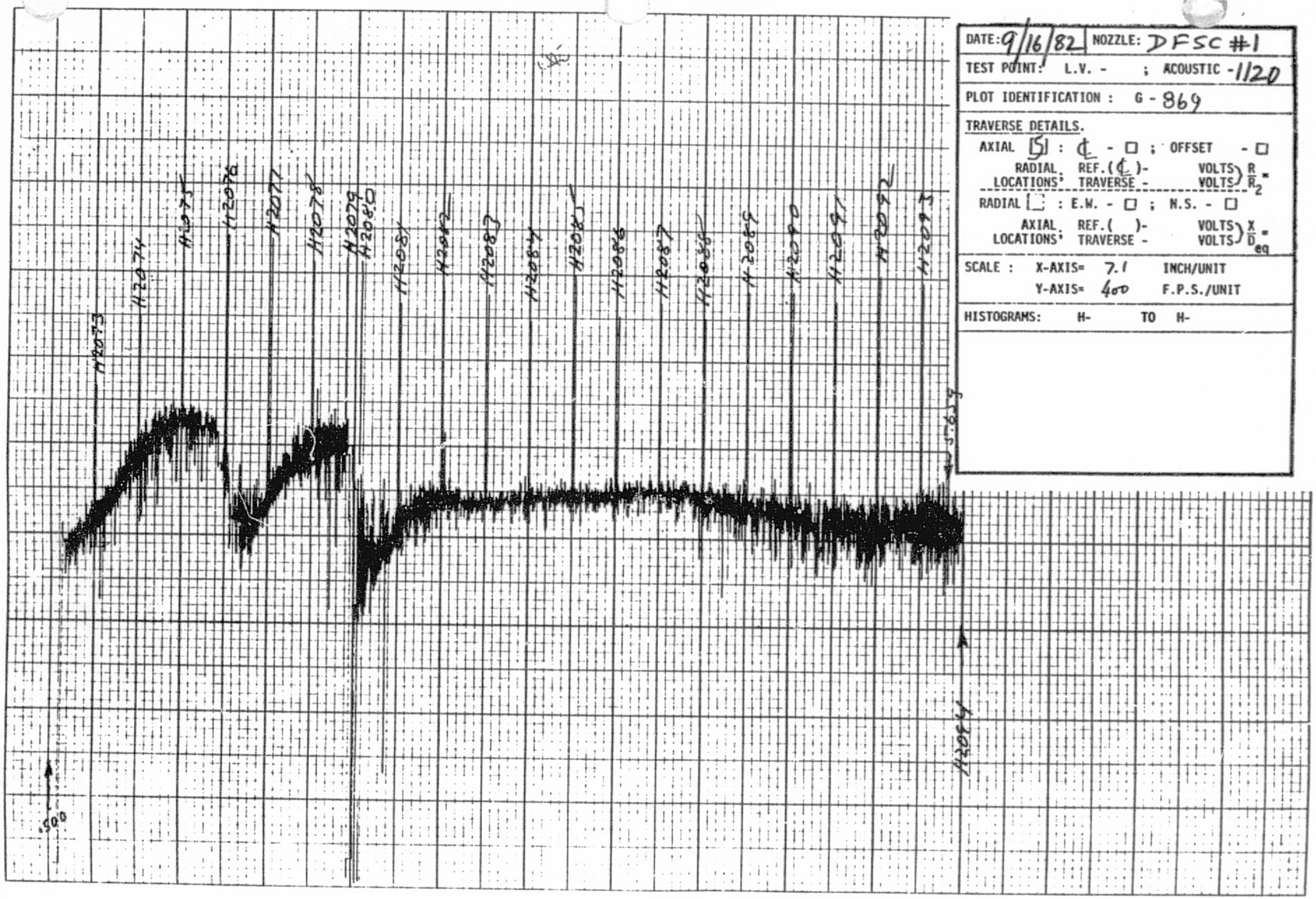
G- 868 Corresponds to 6



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62





DATE: 9/16/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 1120

PLOT IDENTIFICATION : G - 869

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

751

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DATE: 9/16/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 1120	
PLOT IDENTIFICATION : G - 870	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS) R/R₂ = VOLTS)

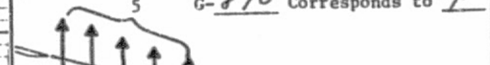
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS) X/D_eq = VOLTS)

SCALE : X-AXIS= 7.1 INCH/UNIT; Y-AXIS= 400 F.P.S./UNIT

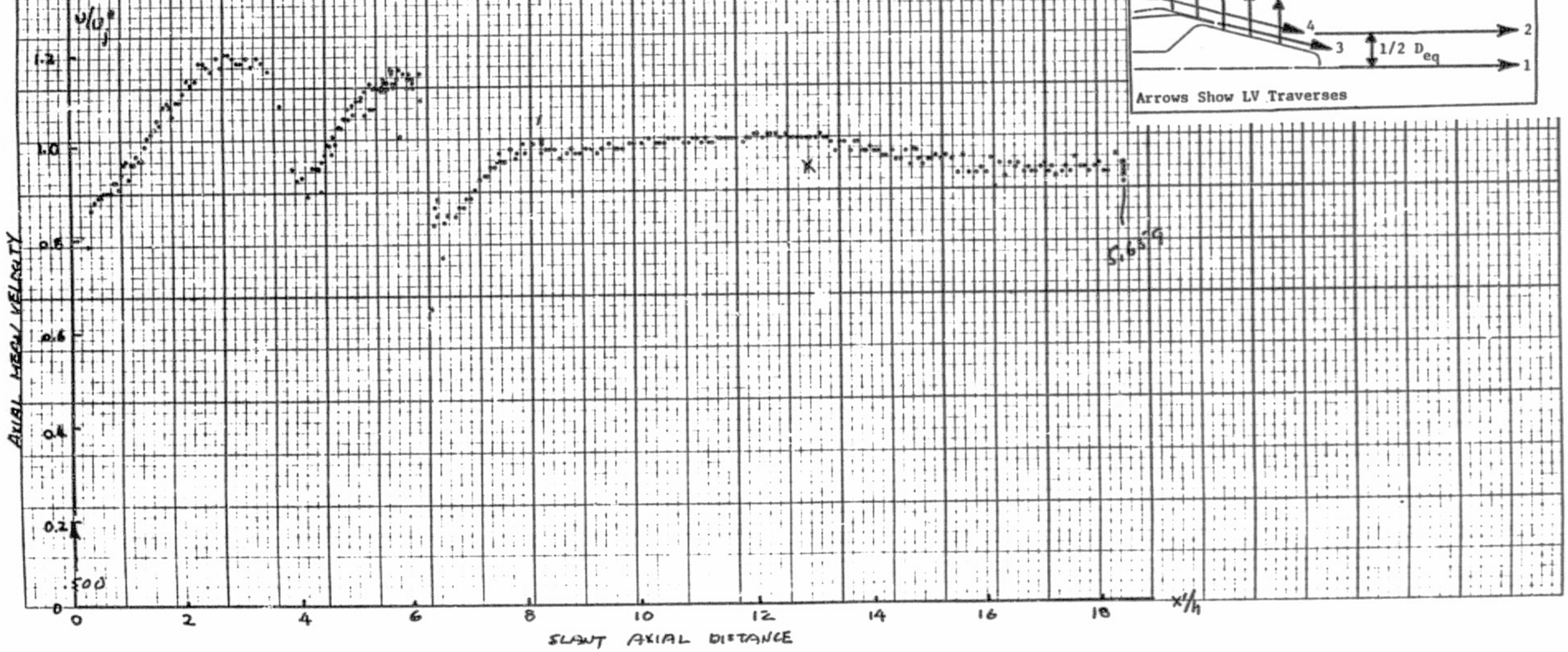
HISTOGRAMS: H- TO H-

G-870 Corresponds to 4



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1120	3.402	884	1772	3.140	858
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1696	1759	880	400	5.23	0.62



NO. XY 1101

752

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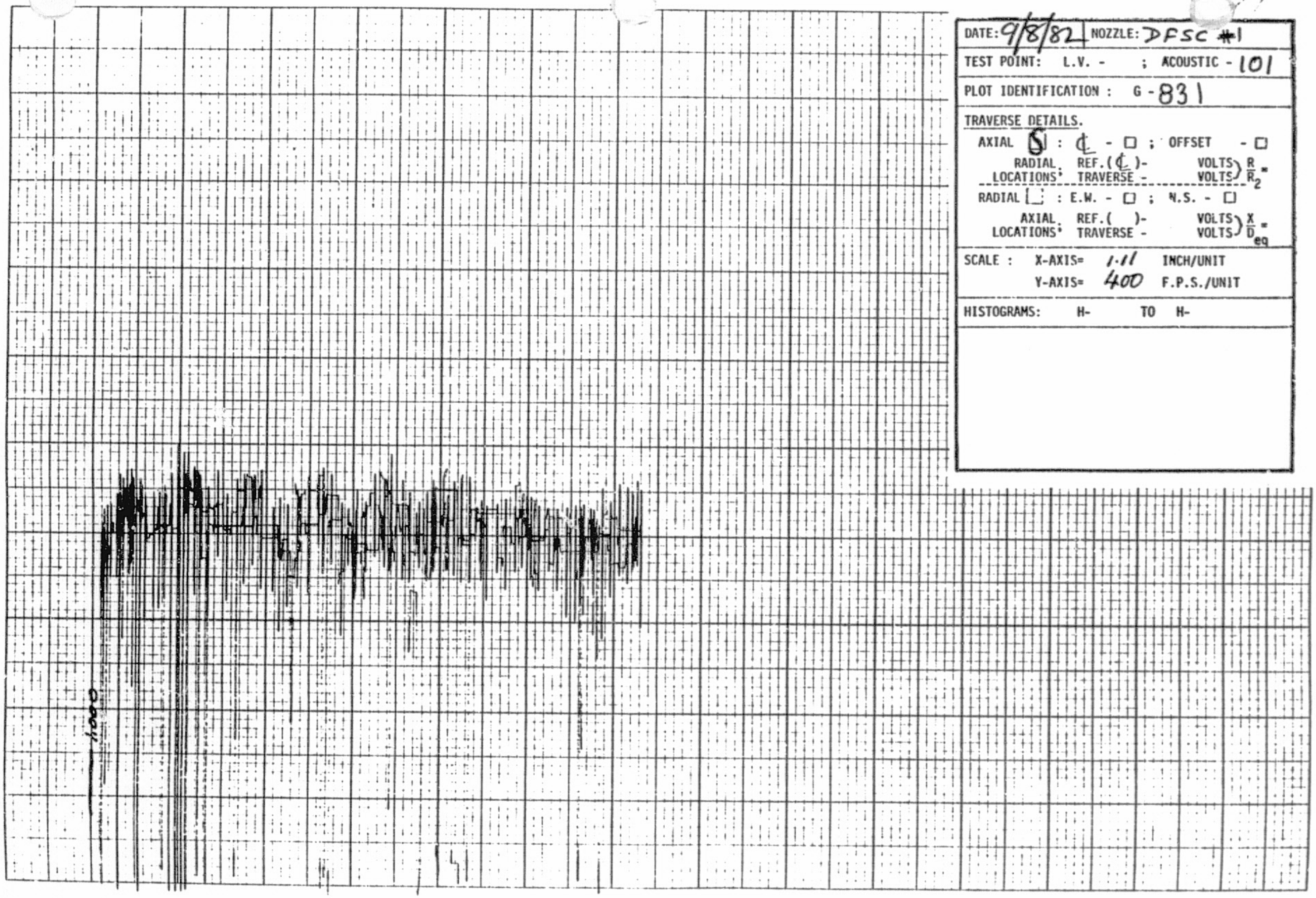


DATE: 9/8/82	NOZZLE: DFSC #1
TEST POINT: L.V. - ; ACOUSTIC - 101	
PLOT IDENTIFICATION : G - 831	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

753

ORIGINAL PAGE IS OF POOR QUALITY

DATE: 9/8/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 101

PLOT IDENTIFICATION : G -832

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

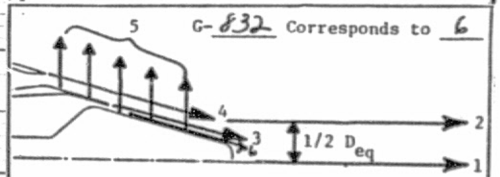
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

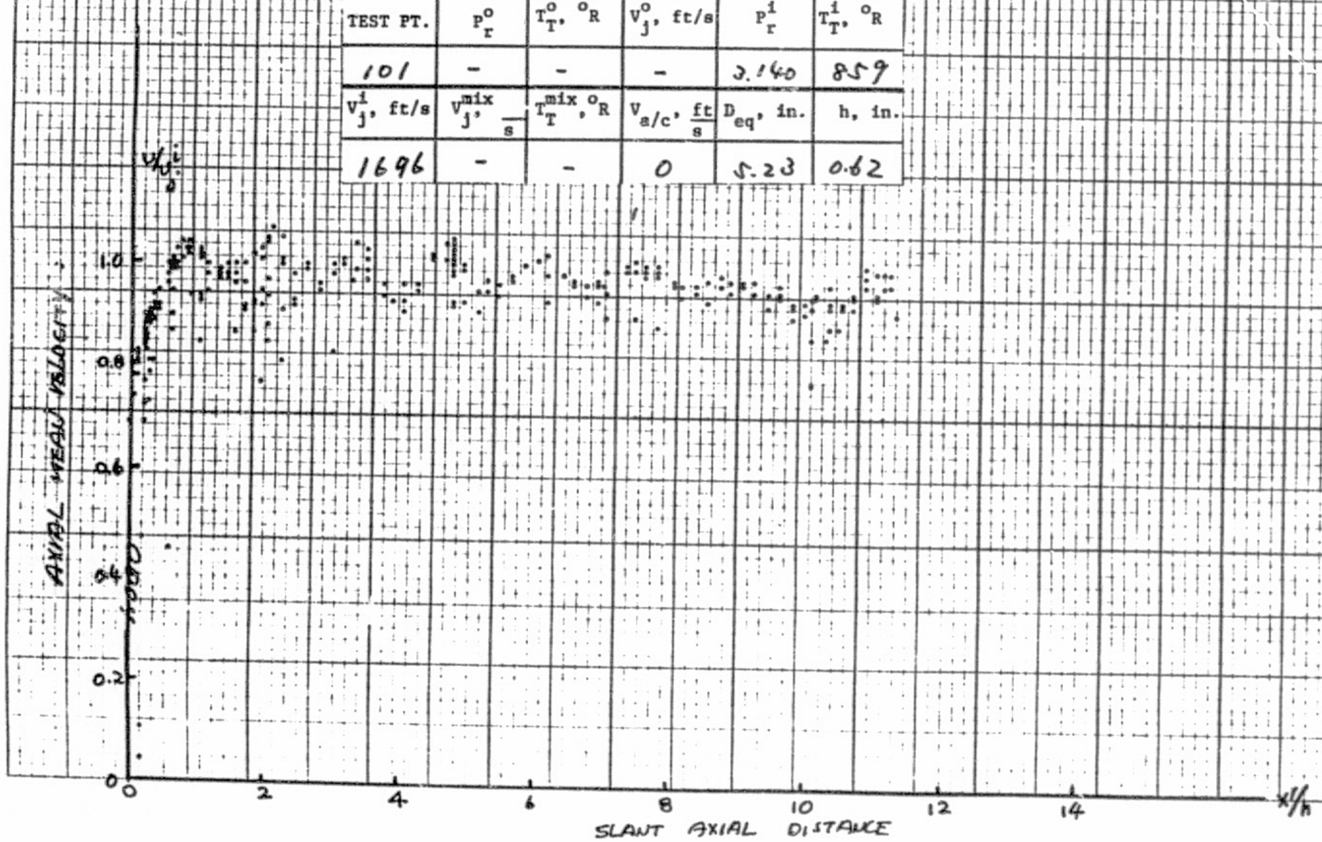
HISTOGRAMS: H- TO H-

G-832 Corresponds to 6



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
101	-	-	-	2.140	859
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1696	-	-	0	5.23	0.62



No. XY 1101

754

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DATE: 9/8/82 NOZZLE: DFSC #1

TEST POINT: L.V. - ; ACOUSTIC - 101

PLOT IDENTIFICATION : G - 833

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

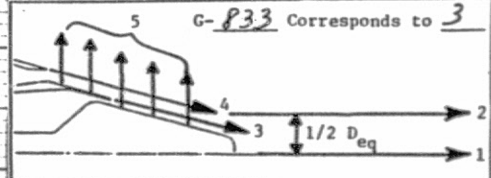
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

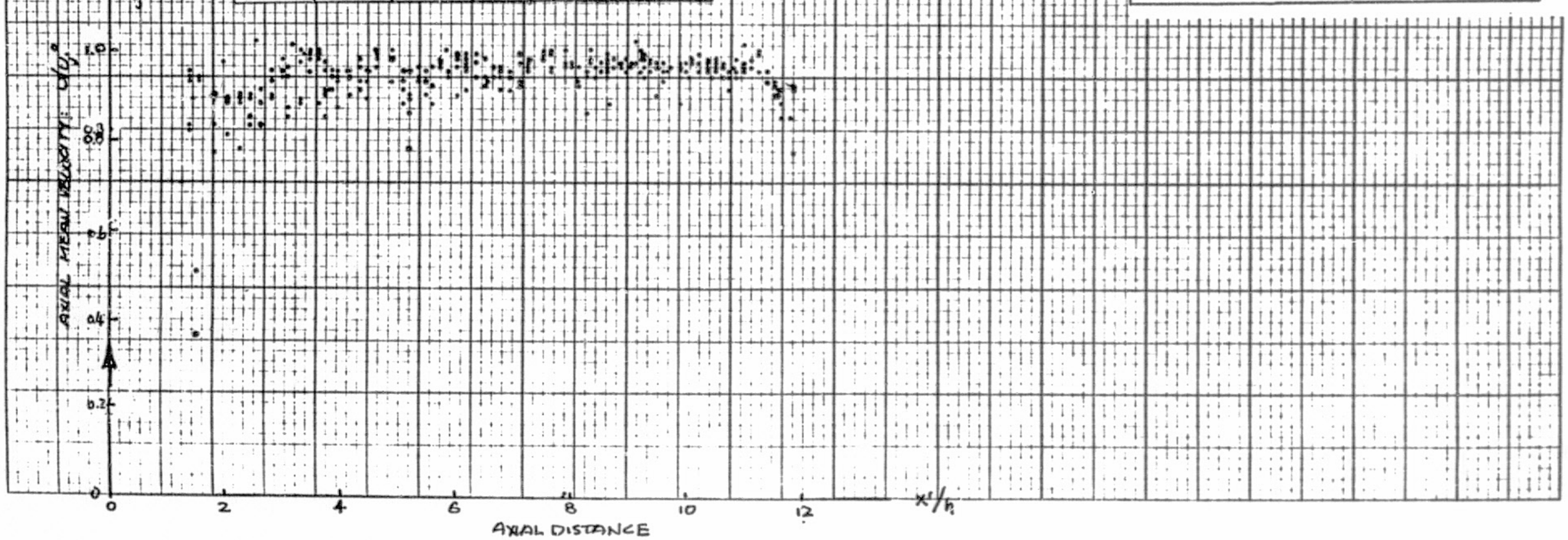
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-833 Corresponds to 3



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
101	-	-	-	3.140	859
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1696	-	-	0	5.23	0.62



DATE: 9/8/82	NOZZLE: DFSC-1
TEST POINT: L.V. - ; ACOUSTIC - 101	
PLOT IDENTIFICATION : G-834	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS) $\frac{R}{R_2}$ = VOLTS

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

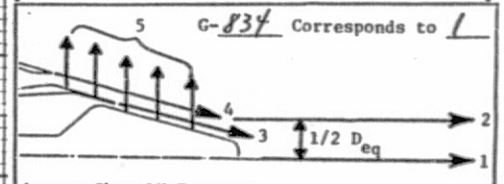
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS) $\frac{X}{D_{eq}}$ = VOLTS

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

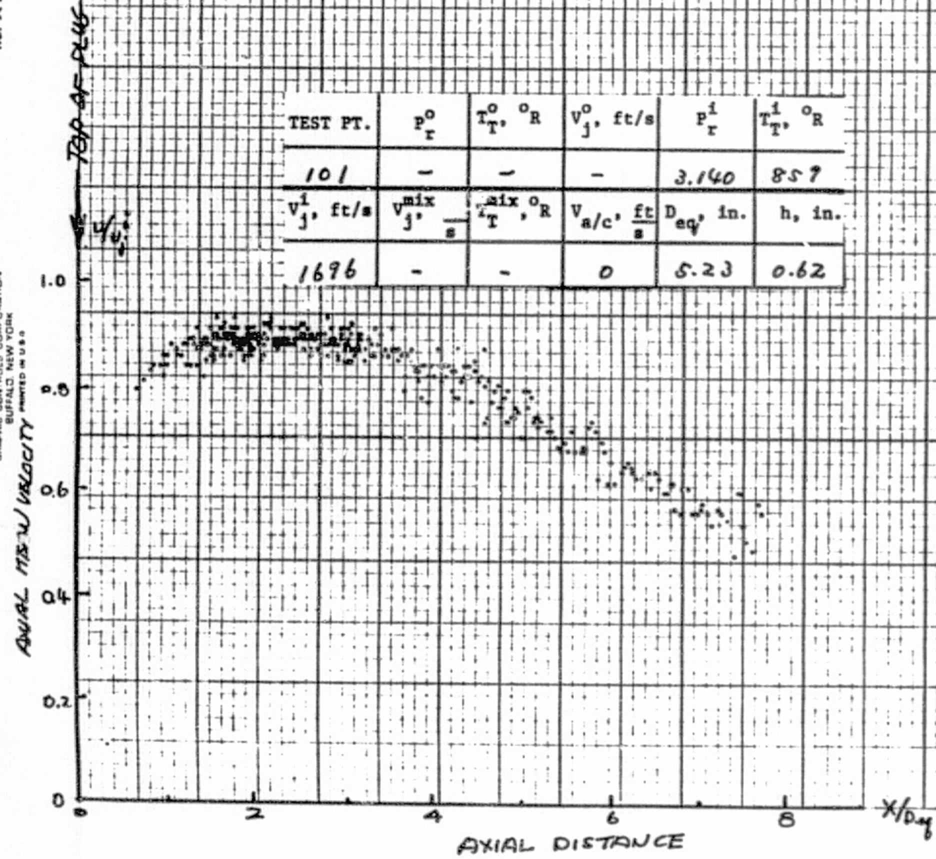
HISTOGRAMS: H- TO H-

G-834 Corresponds to 1

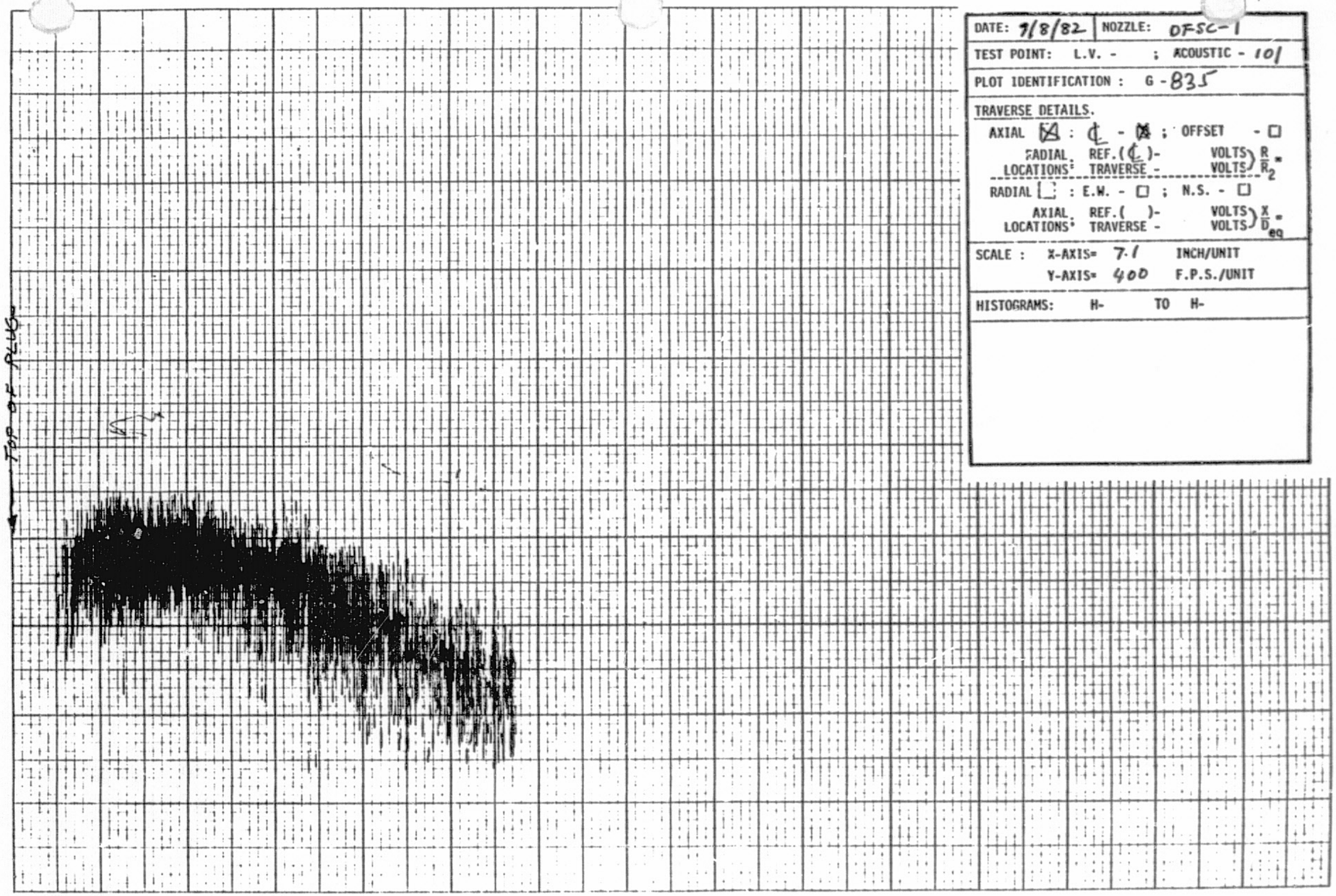


Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
101	–	–	–	3.140	859
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1696	–	–	0	5.23	0.62



756



DATE: 7/8/82 | NOZZLE: OFSC-1
TEST POINT: L.V. - ; ACOUSTIC - 101
PLOT IDENTIFICATION : G-835

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- VOLTS) $\frac{R}{R_2}$ =
TRAVERSE - VOLTS)

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS) $\frac{X}{D_{eq}}$ =
TRAVERSE - VOLTS)

SCALE : X-AXIS= 7.1 INCH/UNIT
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

757

NO. XY 1101

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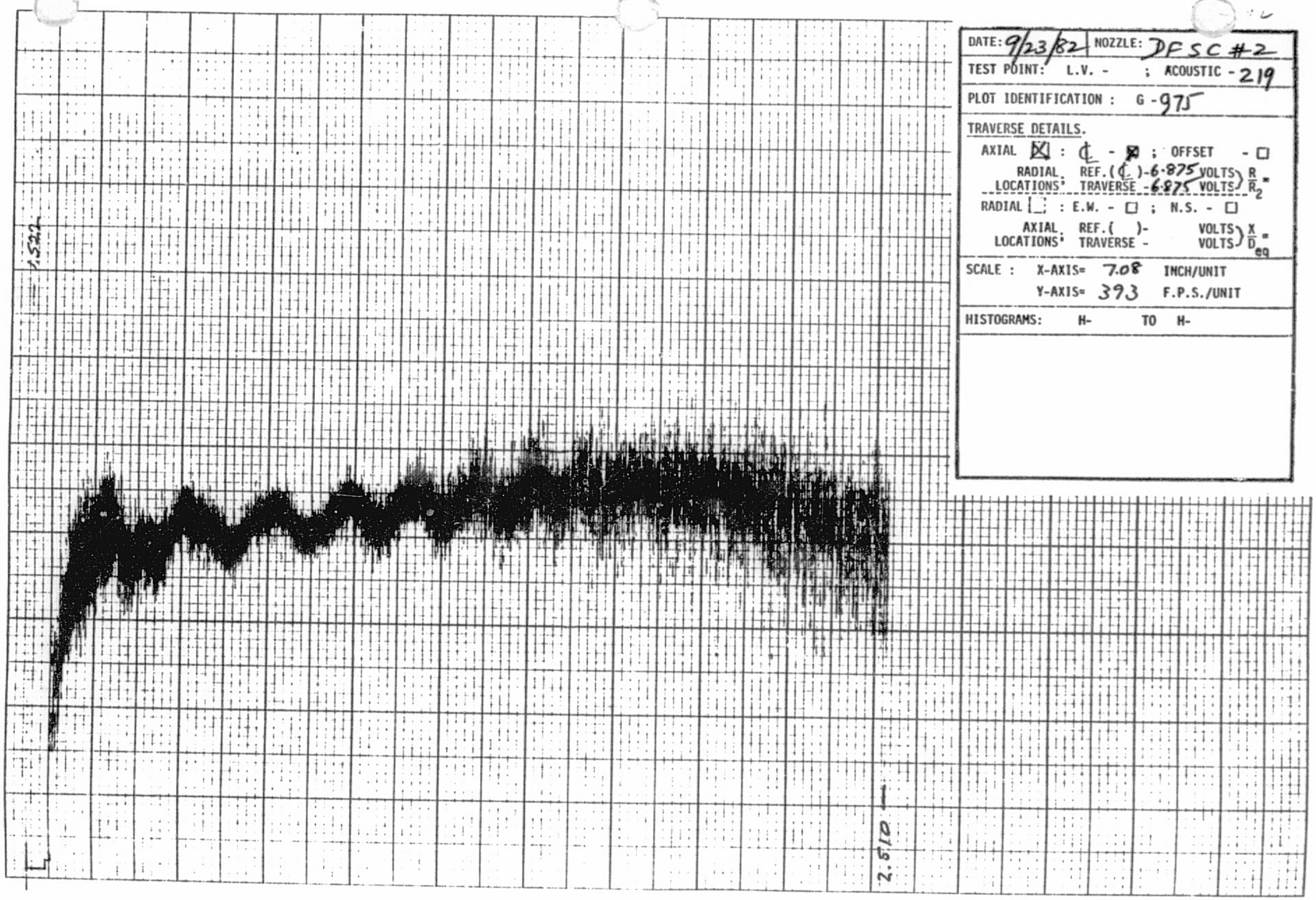
5.2.3.2 Mean Velocity Traces of DFSC-2



DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G - 975

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)-6.875 VOLTS; TRAVERSE -6.875 VOLTS } $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS } $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

759

73

DATE: 9/23/82	NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G - 976

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- 6.875 VOLTS; TRAVERSE - 6.875 VOLTS; R/R_2 =

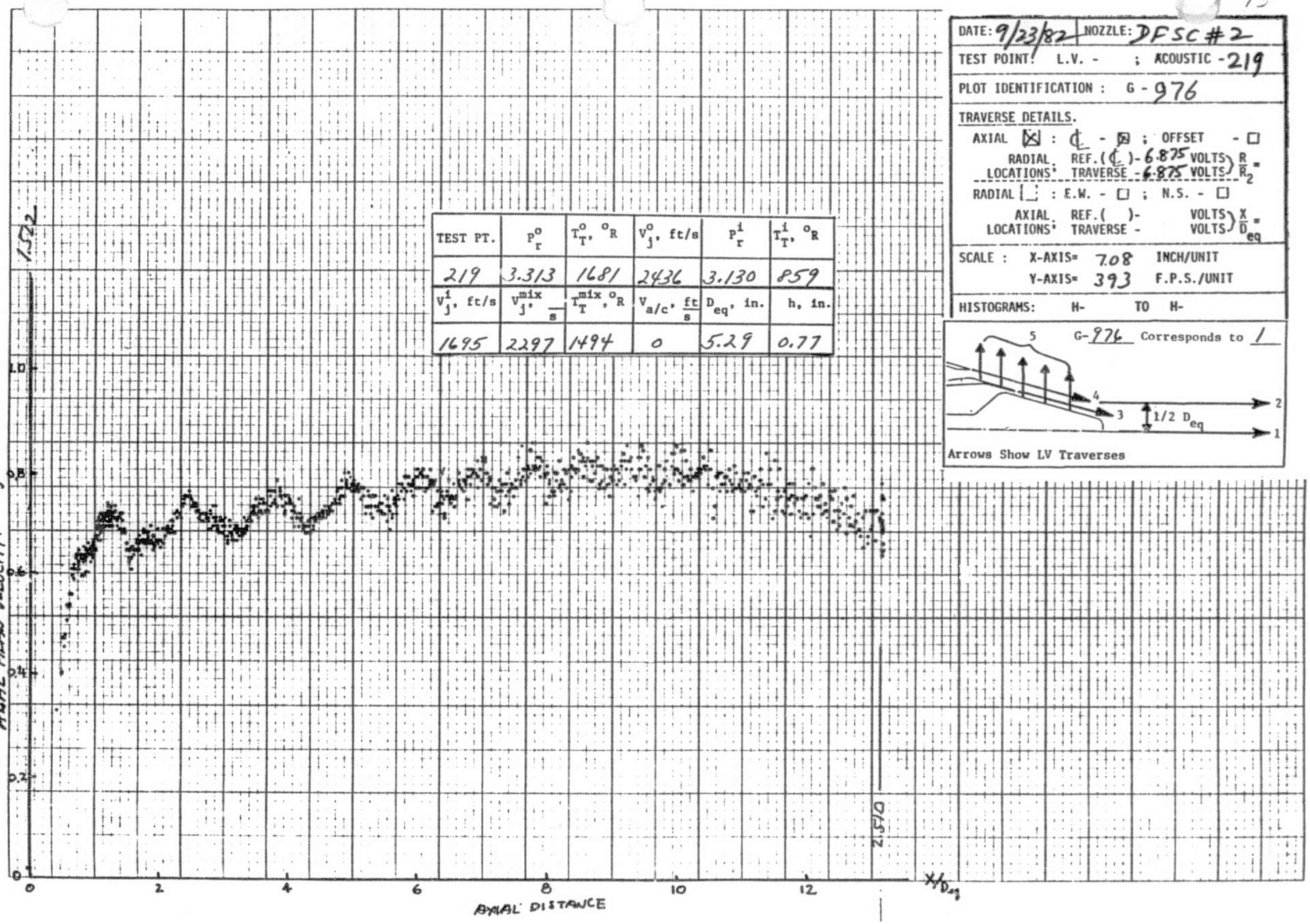
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS; X/D_{eq} =

SCALE : X-AXIS= 7.08 INCH/UNIT; Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
219	3.313	1681	2436	3.130	859
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1695	2297	1494	0	5.29	0.77



760

NO. XY 1101

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DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G - 977

TRAVERSE DETAILS.

AXIAL [X] : ℄ - ☐ ; OFFSET - [X]

RADIAL LOCATIONS: REF.(℄)-6.875 VOLTS / TRAVERSE - VOLTS) $\frac{R}{R_2}$ =

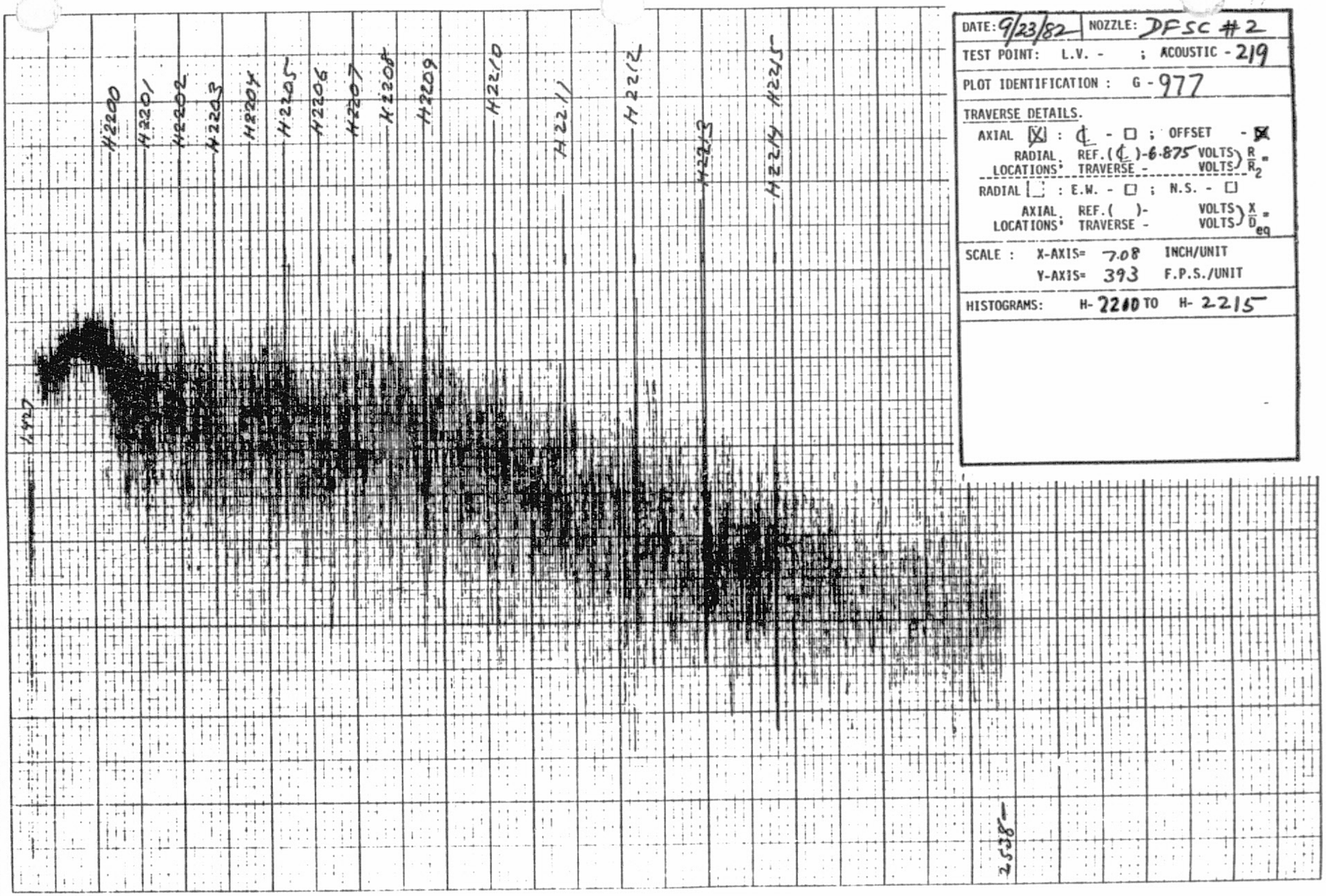
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS / TRAVERSE - VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- 2200 TO H- 2215



No. XY 1101

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO NEW YORK PRINTED IN U.S.A.

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DATE: 9/23/82	NOZZLE: DFSC #2
TEST POINT: L.V. - ; ACOUSTIC - 219	
PLOT IDENTIFICATION : G - 978	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)-6.875 VOLTS; TRAVERSE - VOLTS; $\frac{R}{R_2}$ =

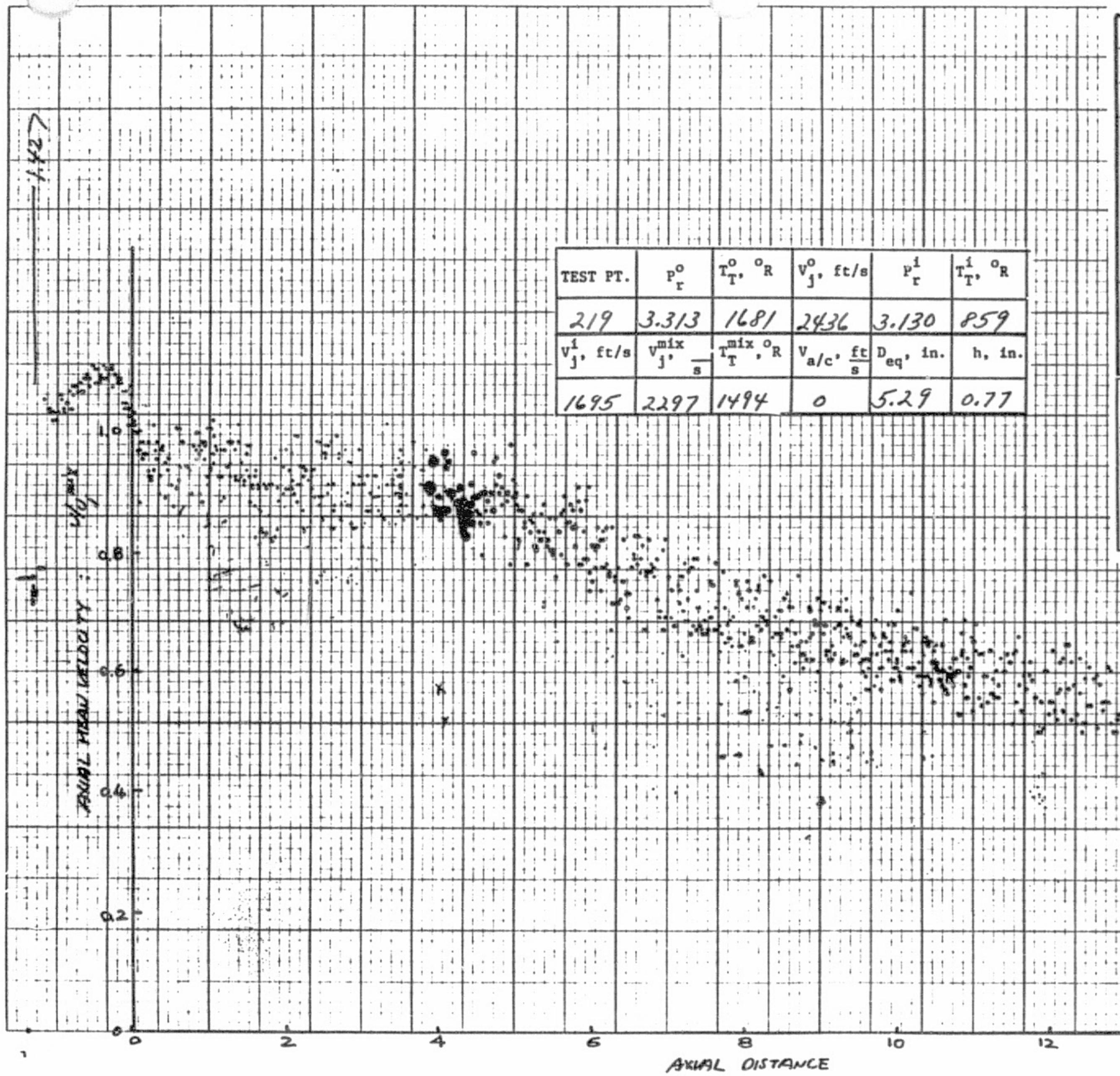
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

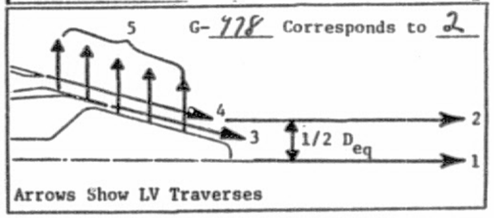
AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT; Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
219	3.313	1681	2436	3.130	859
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1695	2297	1494	0	5.29	0.77





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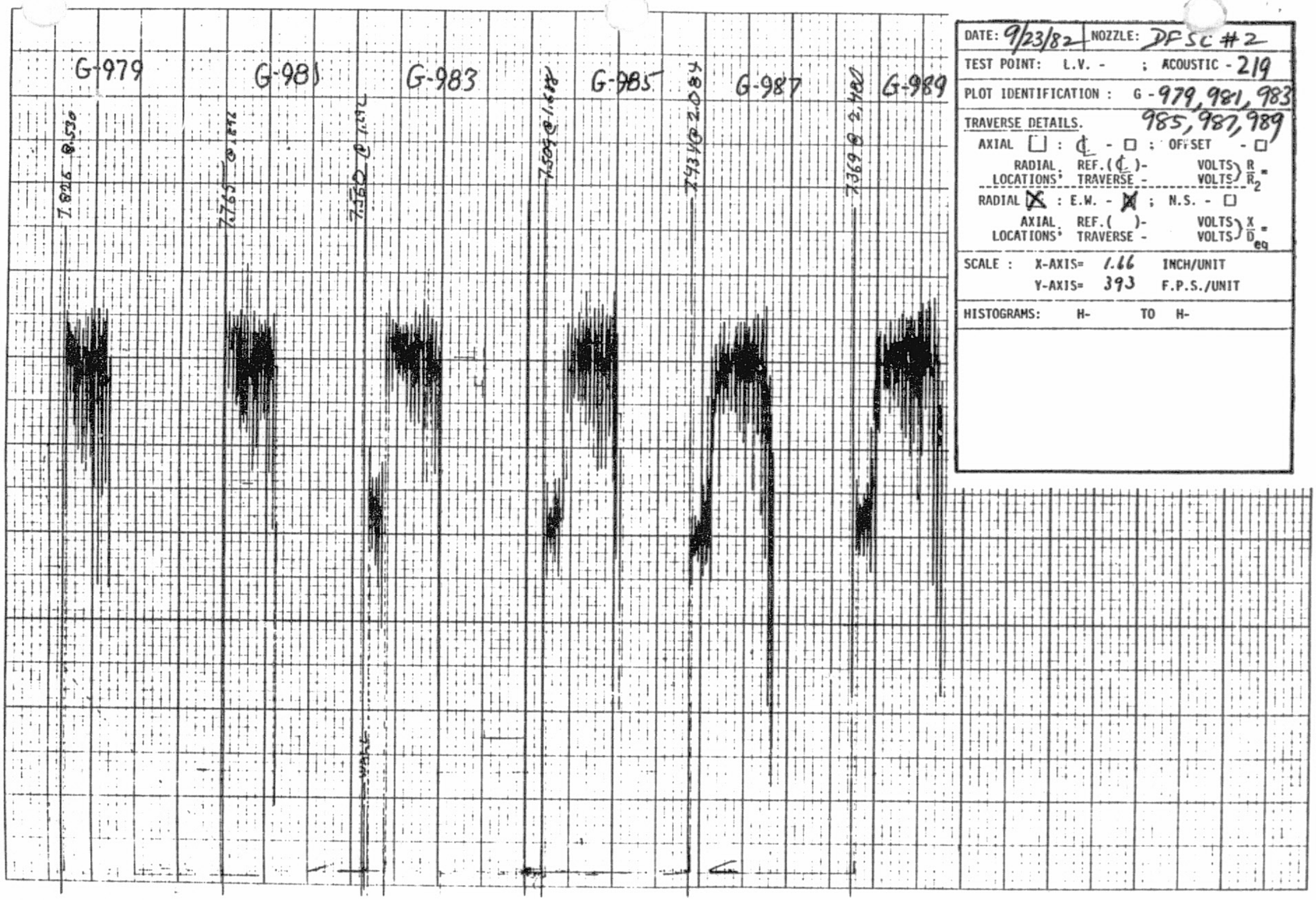

DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G - 979, 981, 983, 985, 987, 989

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. X 1101

763

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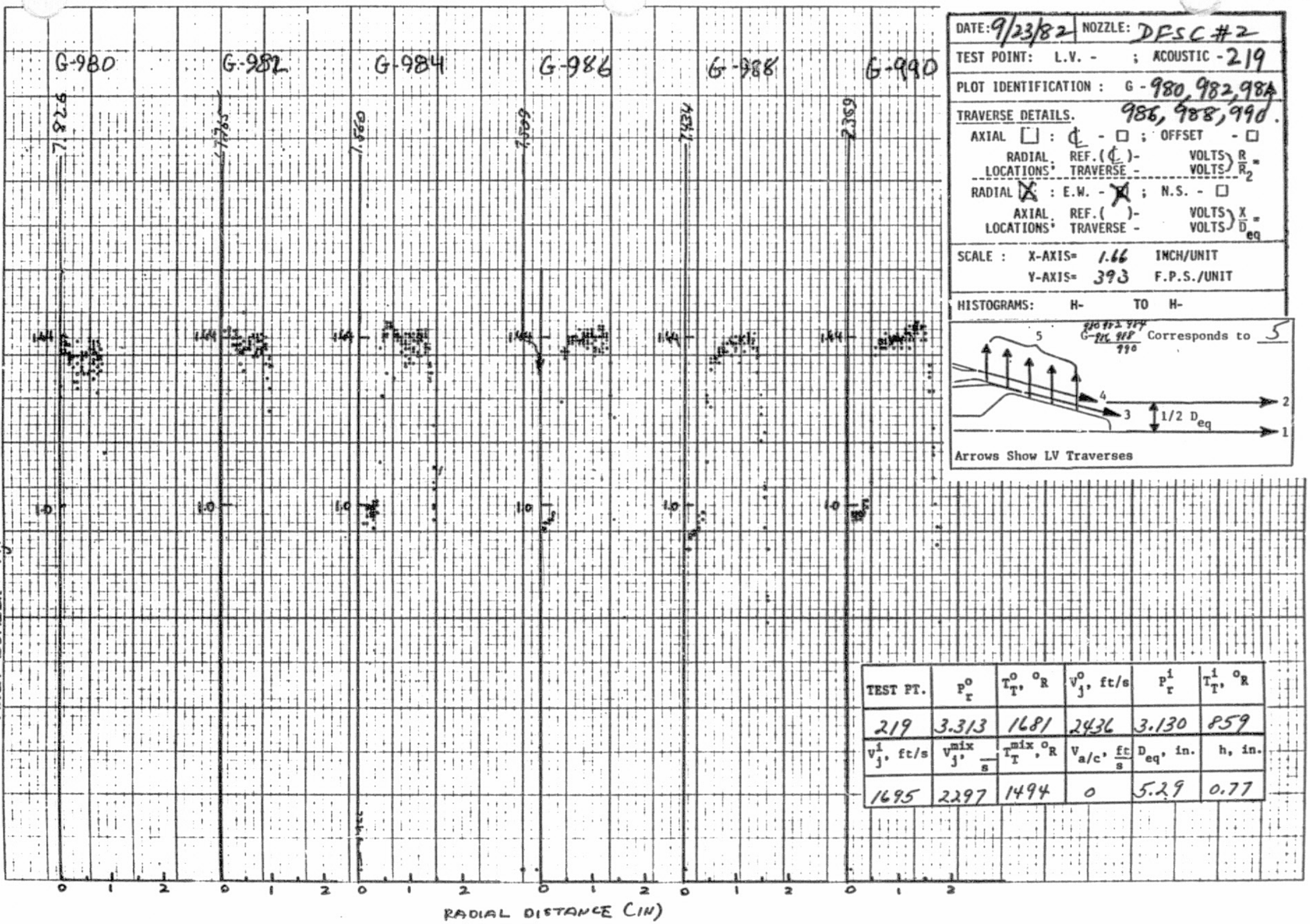

DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G - 980, 982, 984, 986, 988, 990.

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-980 982 984 986 988 990 Corresponds to 5

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
219	3.313	1681	2436	3.130	859
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1695	2297	1494	0	5.29	0.77

NO. XY 1101

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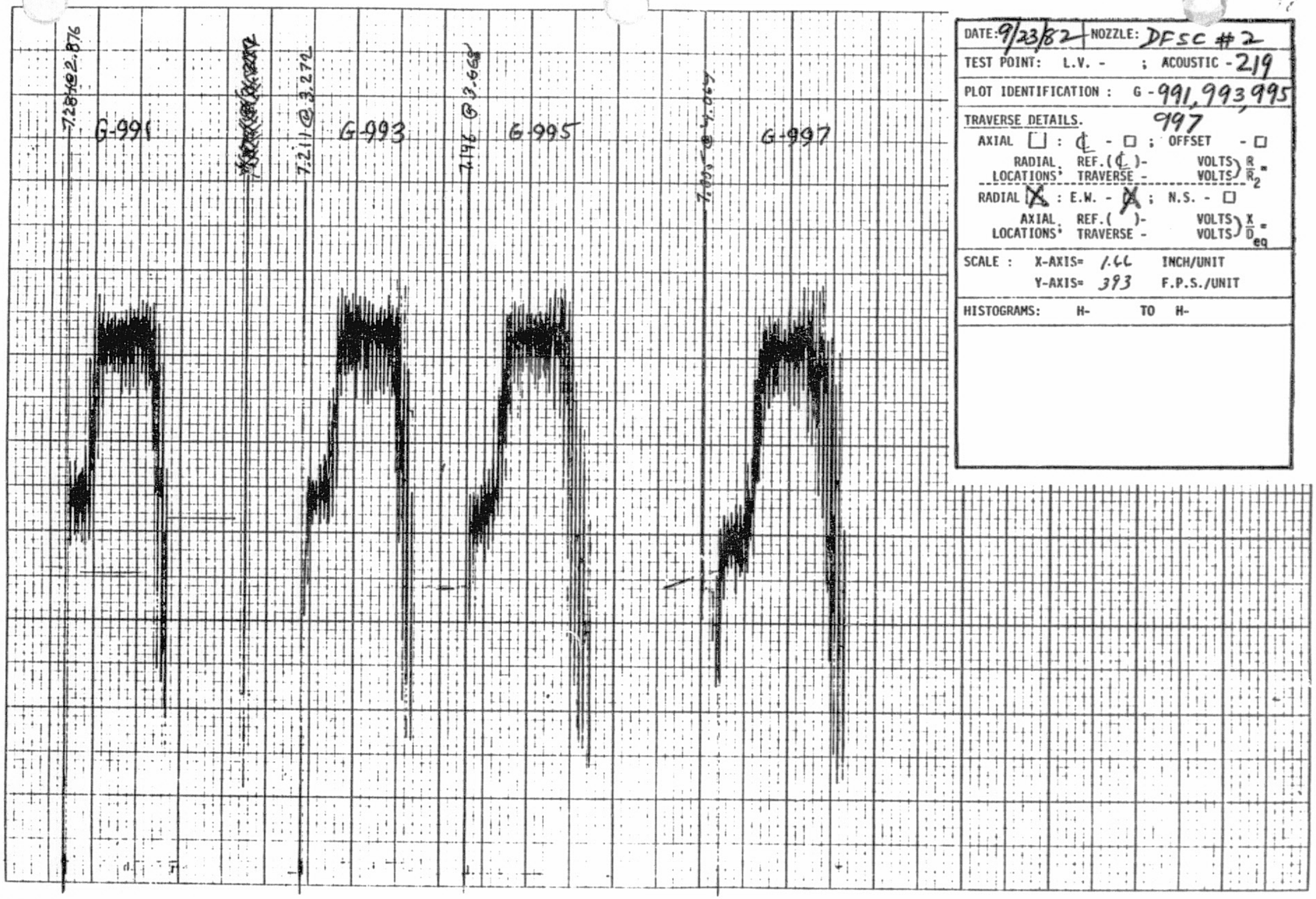

DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G - 991, 993, 995, 997

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

765

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DATE: 9/23/82 NOZZLE: DESC #2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G - 992, 994, 996, 998

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\} \frac{R}{R_2}$ =

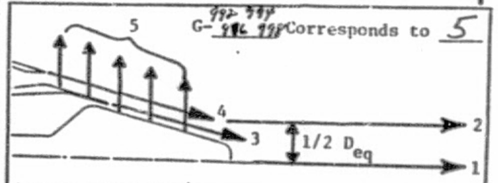
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\} \frac{X}{D_{eq}}$ =

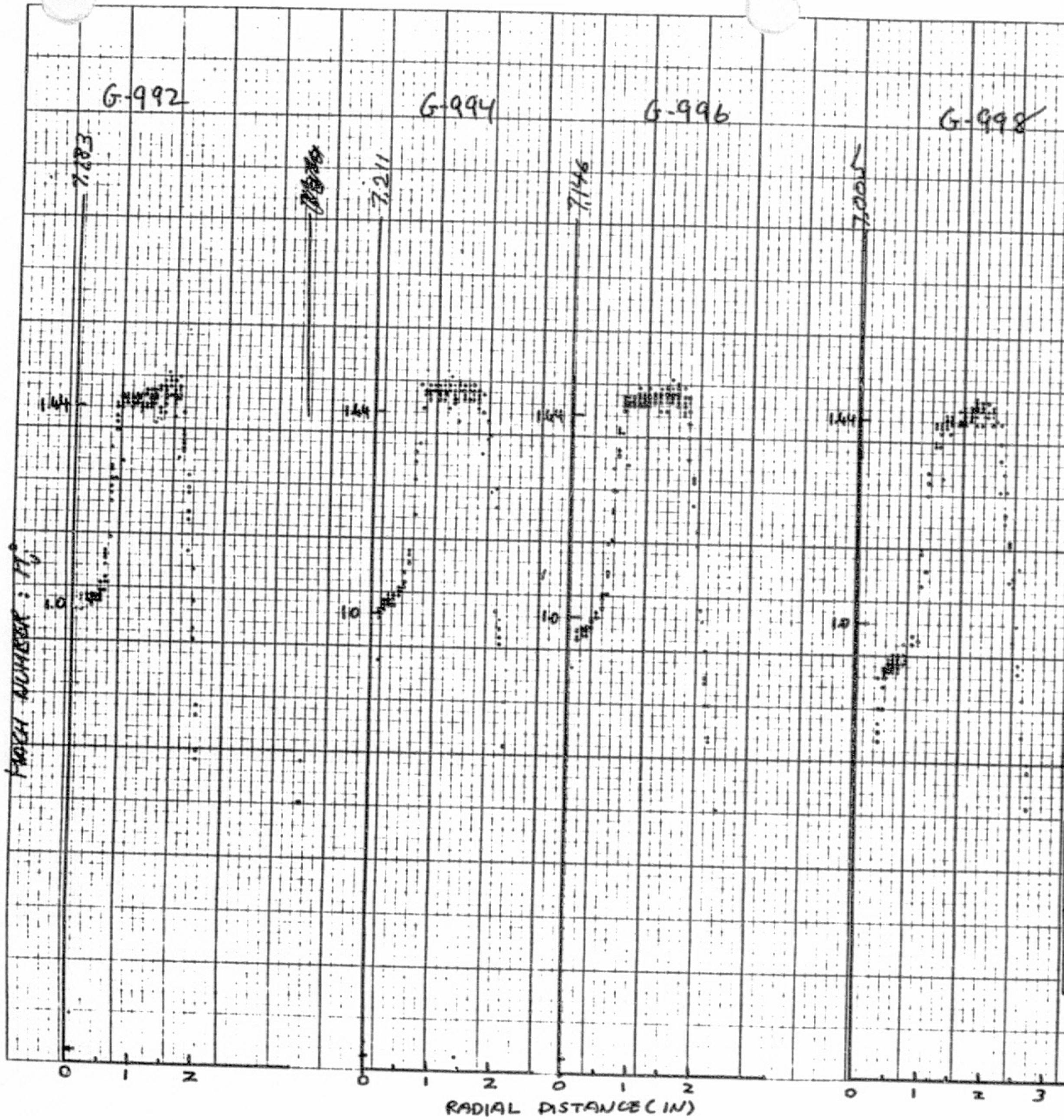
SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



Arrows Show LV Traverses



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
219	3.313	1681	2436	3.130	859
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1695	2297	1494	0	5.29	0.77

DATE: 9/27/82 NOZZLE: DFSC#2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G - 1059

TRAVERSE DETAIL:

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

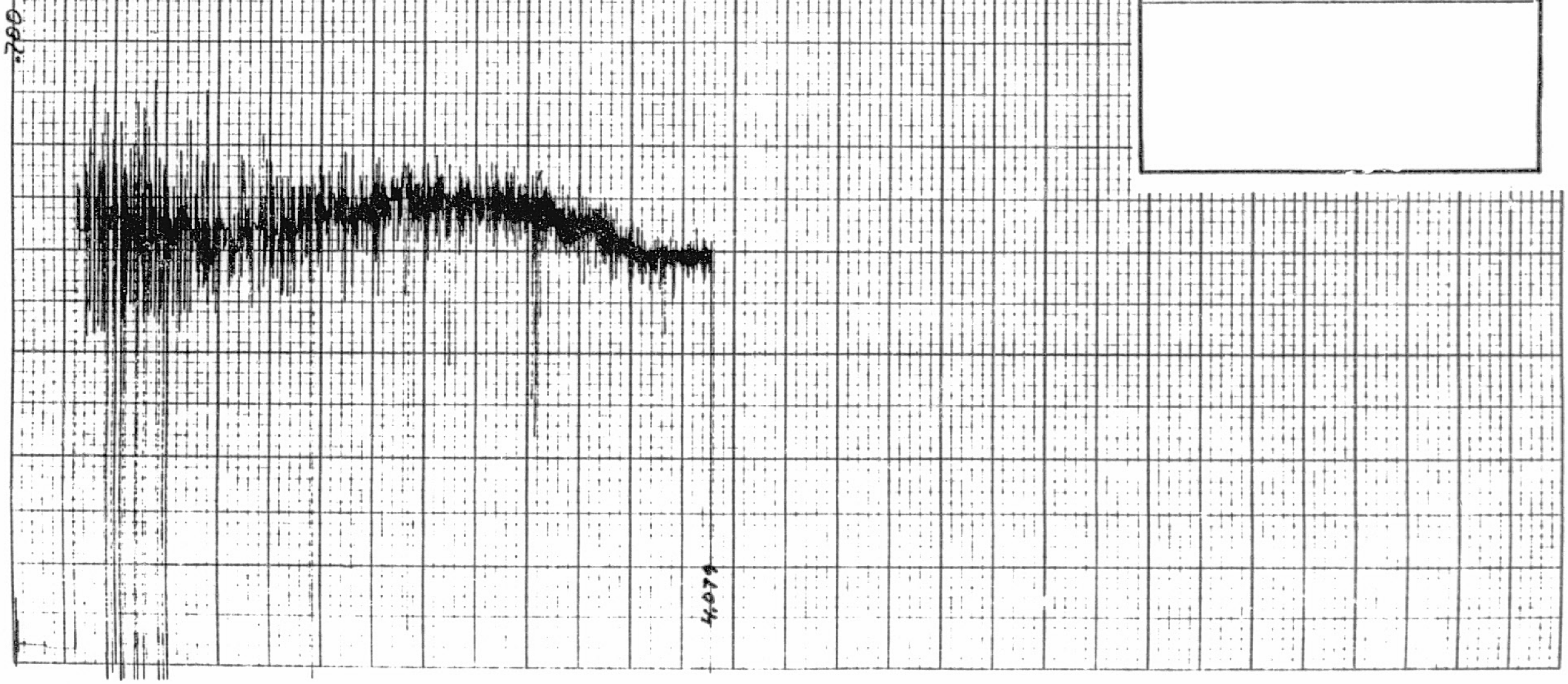
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G -1060

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ , OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

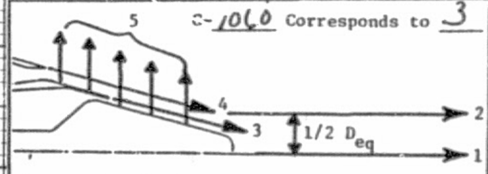
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

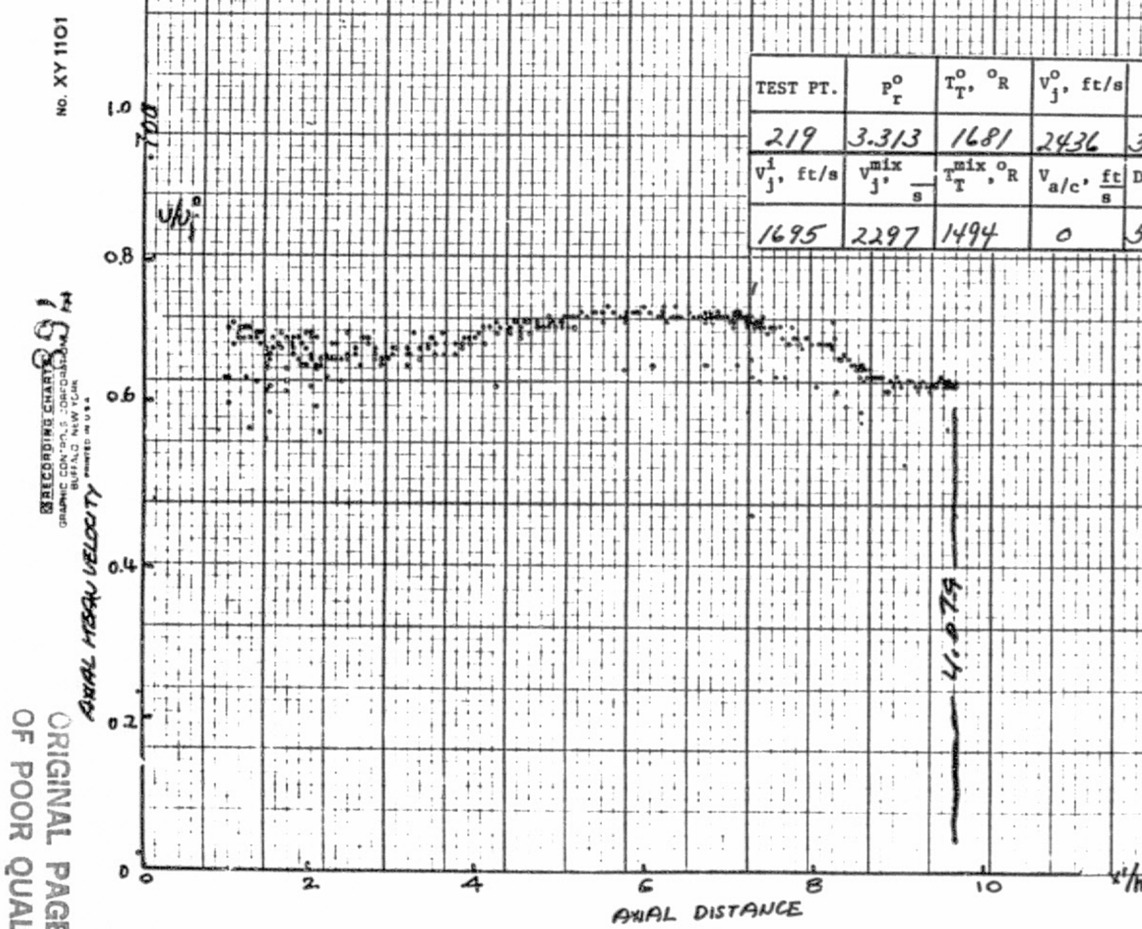
Y-AXIS= 398 F.P.S./UNIT

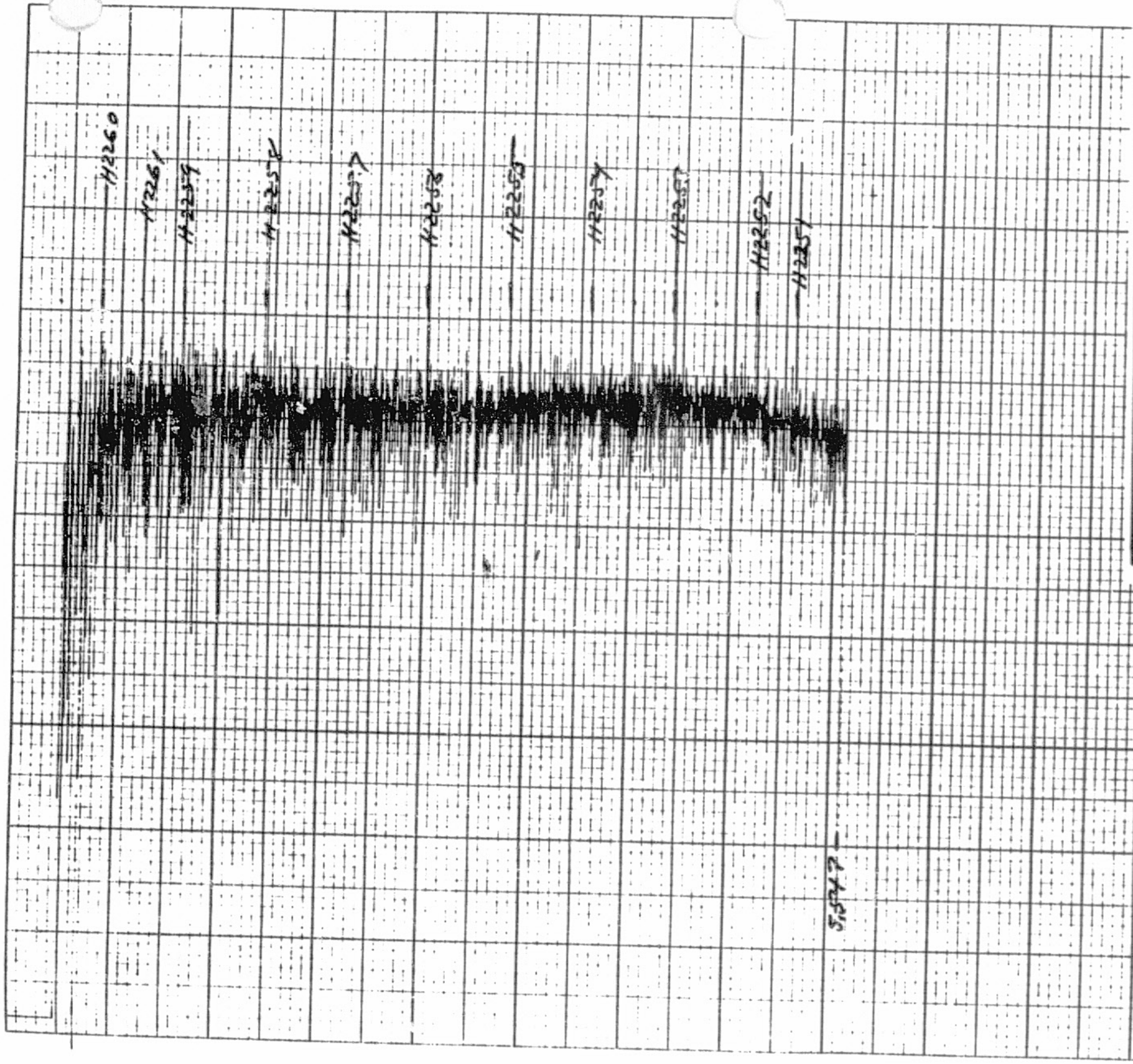
HISTOGRAMS: H- TO H-



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
219	3.313	1681	2436	3.130	859
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1695	2297	1494	0	5.29	0.77





DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G - 1063

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

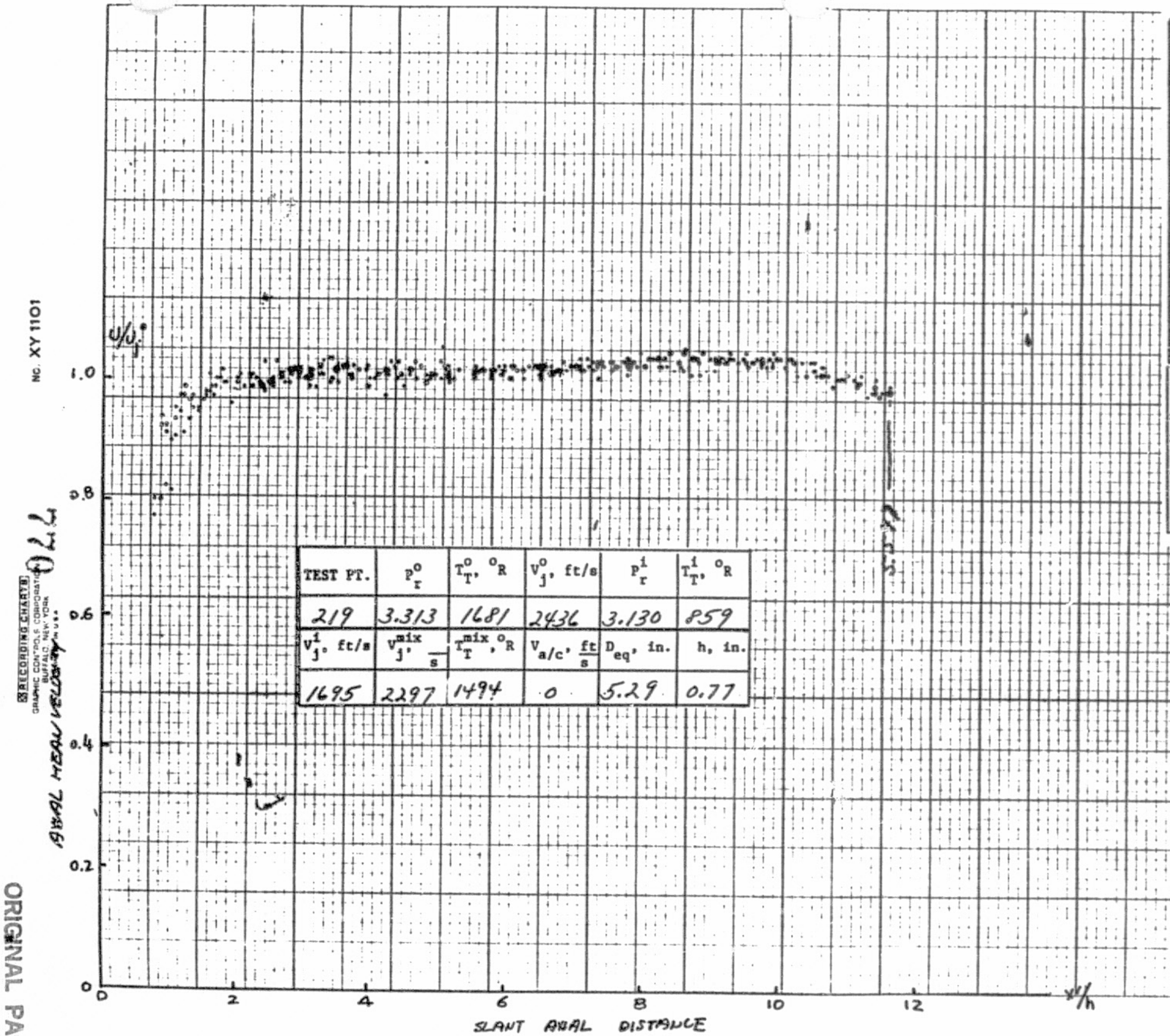
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H-2251 TO H-2261

NO. XY 1101

769



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
219	3.313	1681	2436	3.130	859
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1695	2297	1494	0	5.29	0.77

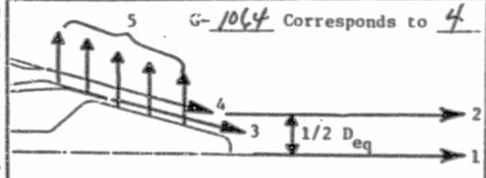
DATE: 9/27/82 NOZZLE: DFSC #2
TEST POINT: L.V. - ; ACOUSTIC - 219
PLOT IDENTIFICATION : G - 1064

TRAVERSE DETAILS.
AXIAL [S] : ℄ - ☐ ; OFFSET - ☐
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G- 1064 Corresponds to 4



Arrows Show LV Traverses

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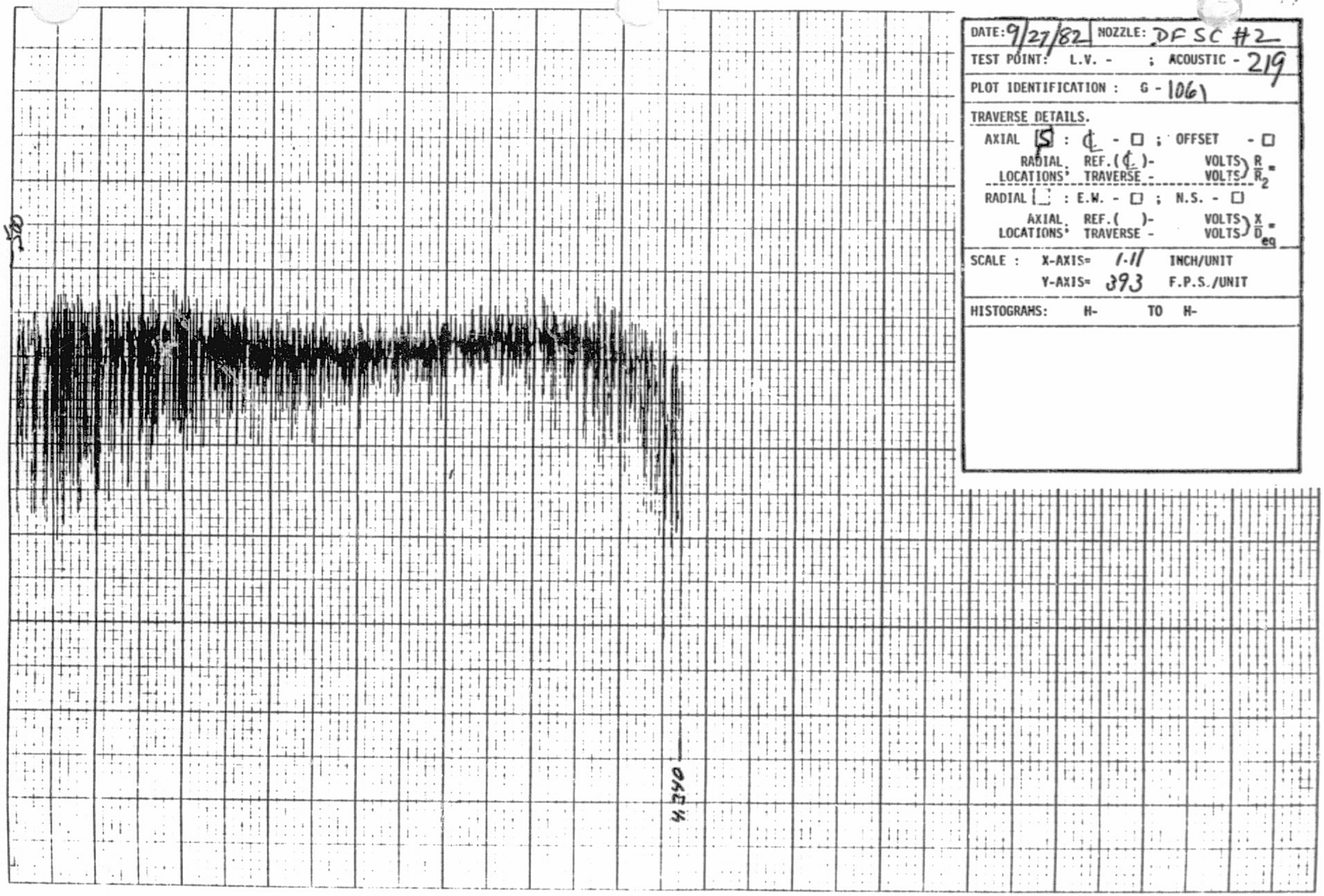

DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 219

PLOT IDENTIFICATION : G - 1061

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

777

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DATE: 9/27/82	NOZZLE: DFSC #2
TEST POINT: L.V. - ; ACOUSTIC - 219	
PLOT IDENTIFICATION : G - 1062	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

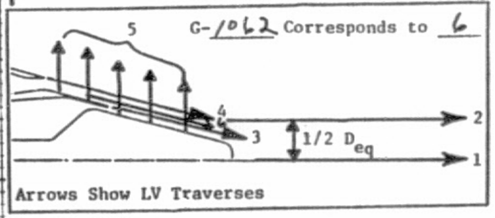
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

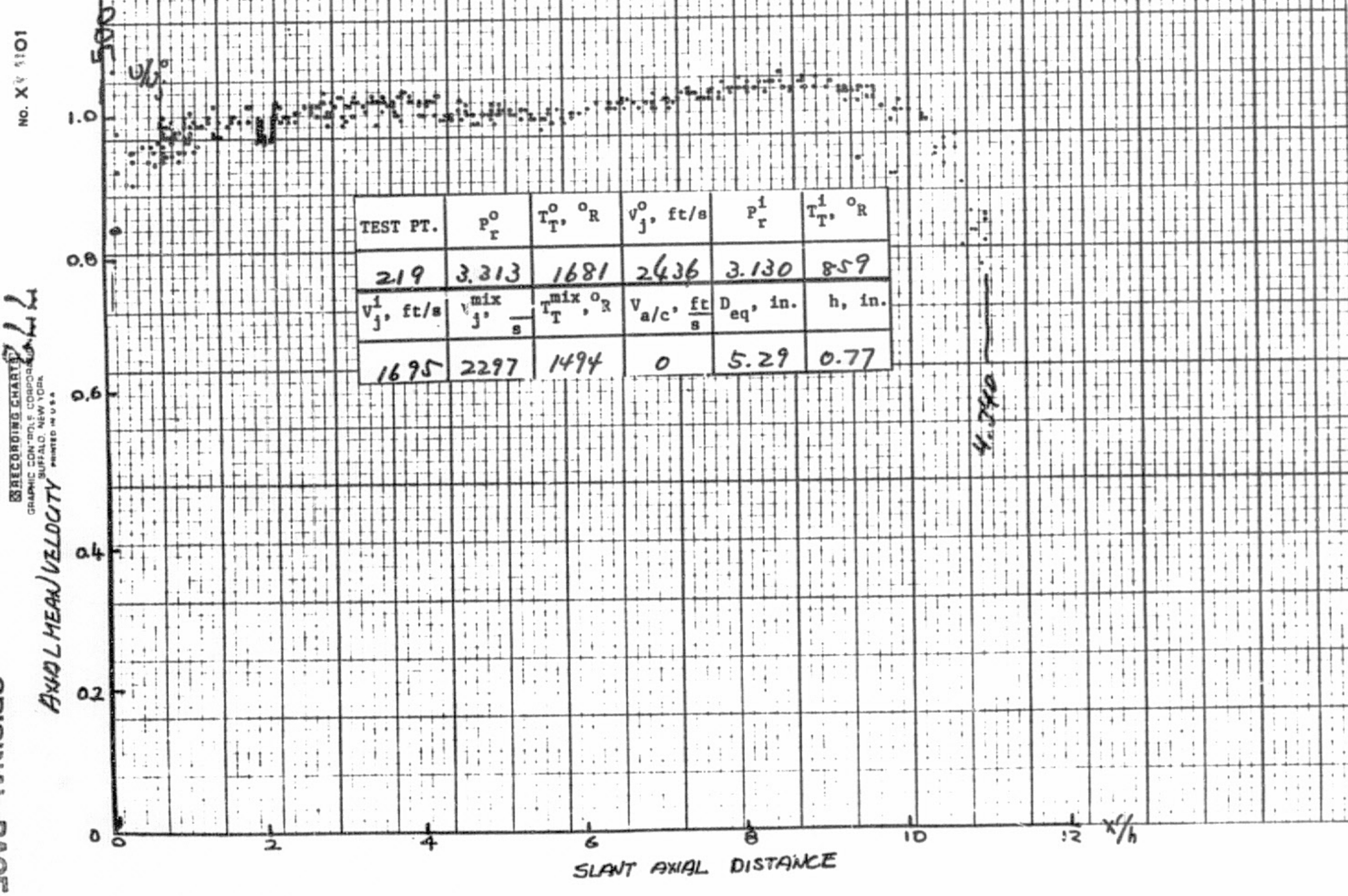
AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS = 1.11 INCH/UNIT

Y-AXIS = 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-





TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
219	3.313	1681	2436	3.130	859
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1695	2297	1494	0	5.29	0.77

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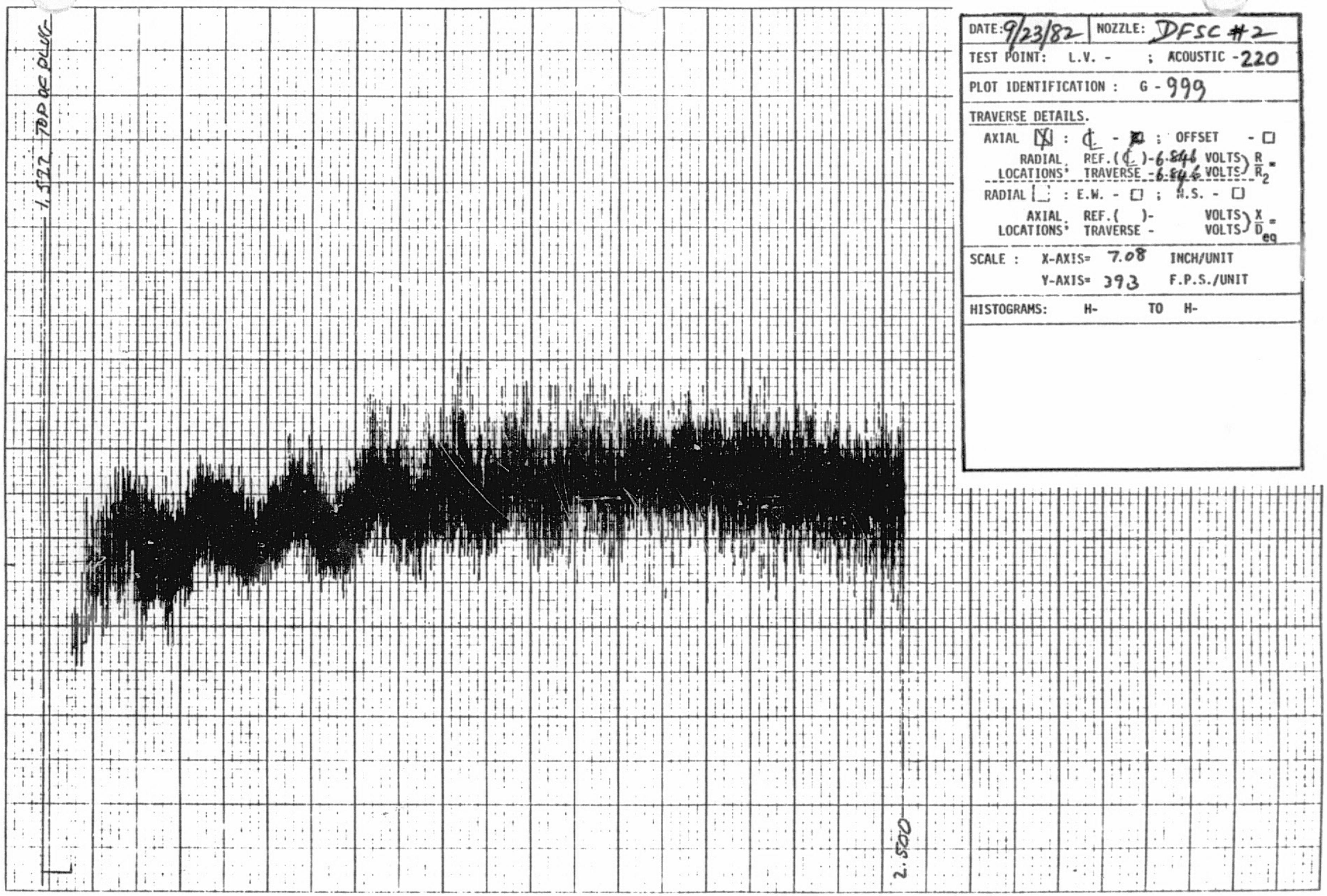
OF POOR QUALITY



DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 220

PLOT IDENTIFICATION : G - 999

TRAVERSE DETAILS.

AXIAL [X] : ℄ - [X] ; OFFSET - [ ]

RADIAL LOCATIONS: REF.(℄)- 6.846 VOLTS; TRAVERSE - 6.846 VOLTS } $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - [ ] ; N.S. - [ ]

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS } $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

770

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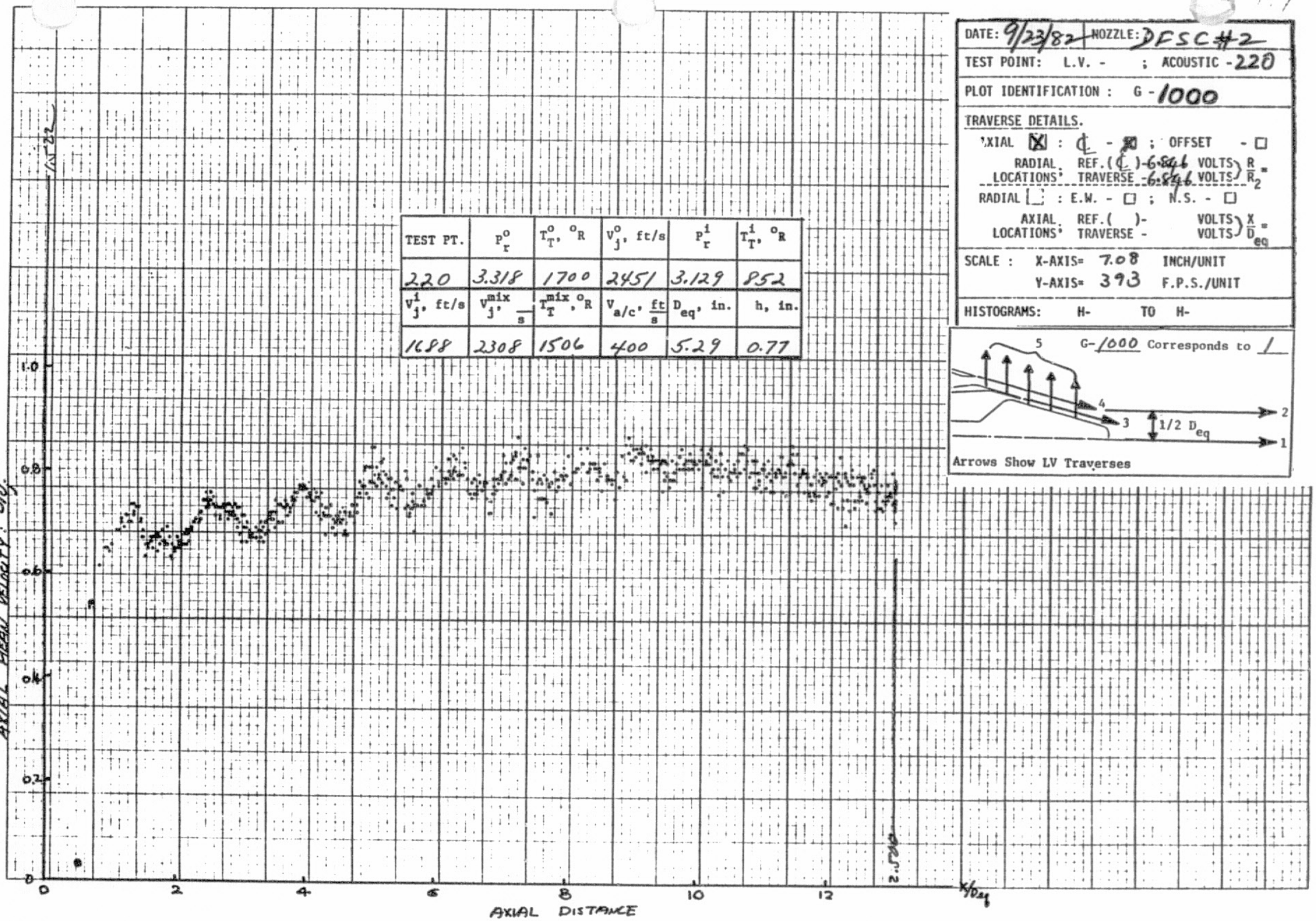


TEST PT.	P_r^o	T_T^o, ^oR	V_j^o, ft/s	P_r^i	T_T^i, ^oR
220	3.318	1700	2451	3.129	852
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, ^oR	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1688	2308	1506	400	5.29	0.77

DATE: 9/23/82 NOZZLE: DFSC#2

TEST POINT: L.V. - ; ACOUSTIC - 220

PLOT IDENTIFICATION : G - 1000

TRAVERSE DETAILS.

AXIAL [X] : ℄ - [X] ; OFFSET - [ ]

RADIAL LOCATIONS: REF. (℄) - 6.846 VOLTS; TRAVERSE - 6.846 VOLTS; $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - [ ] ; N.S. - [ ]

AXIAL LOCATIONS: REF. ( ) - VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

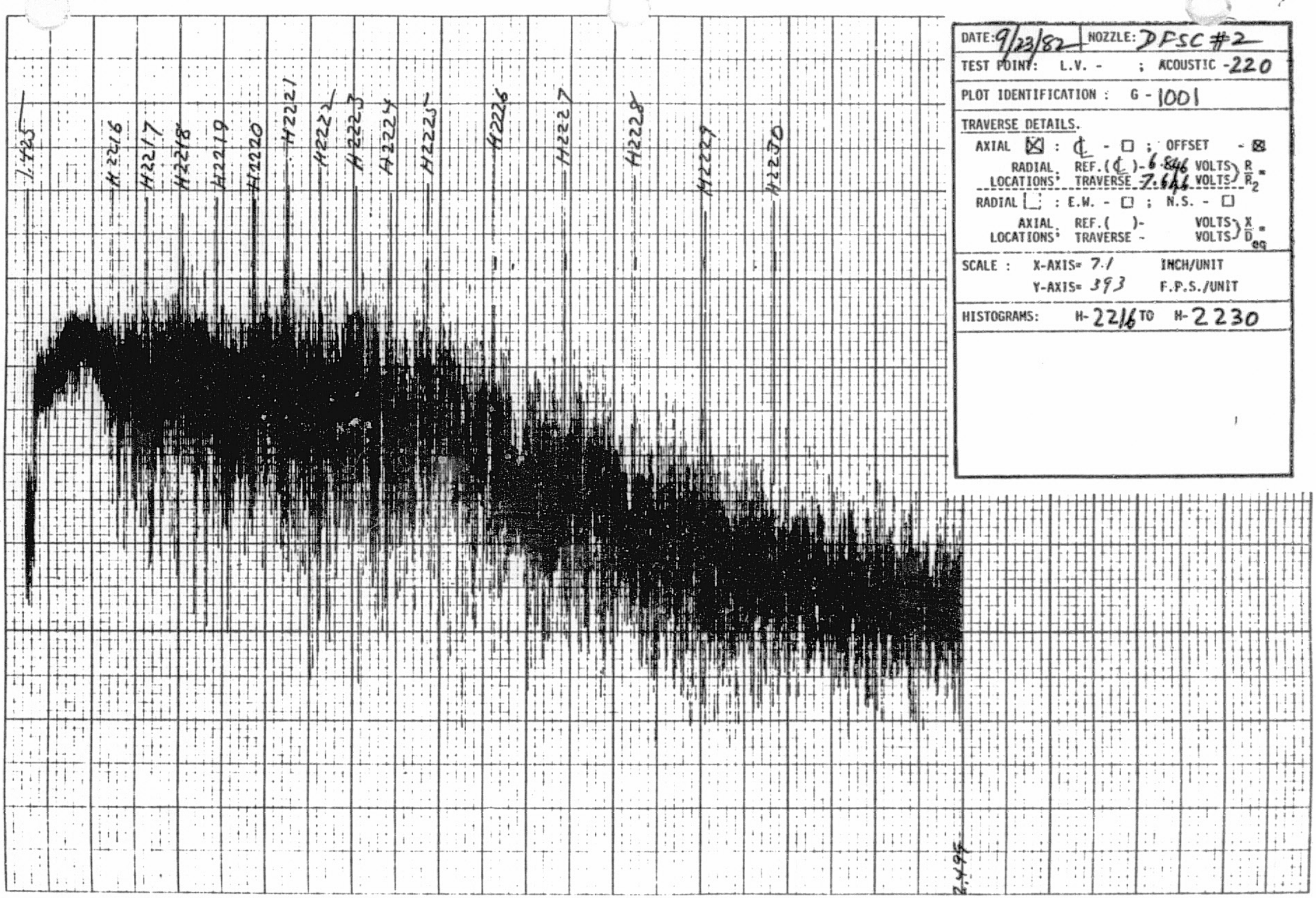
SCALE : X-AXIS= 7.08 INCH/UNIT; Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1000 Corresponds to 1

Arrows Show LV Traverses

774



DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC -220

PLOT IDENTIFICATION : G - 1001

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- 6.846 VOLTS; TRAVERSE - 7.646 VOLTS } R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS } X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H-2216 TO H-2230

NO. XY 1101

775

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DATE: 9/23/82	NOZZLE: DFSC#2
TEST POINT: L.V. - ; ACOUSTIC -220	
PLOT IDENTIFICATION : G - 1002	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

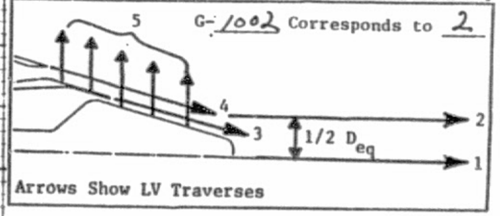
RADIAL LOCATIONS: REF.(℄)-6.846 VOLTS; TRAVERSE -7.646 VOLTS; $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

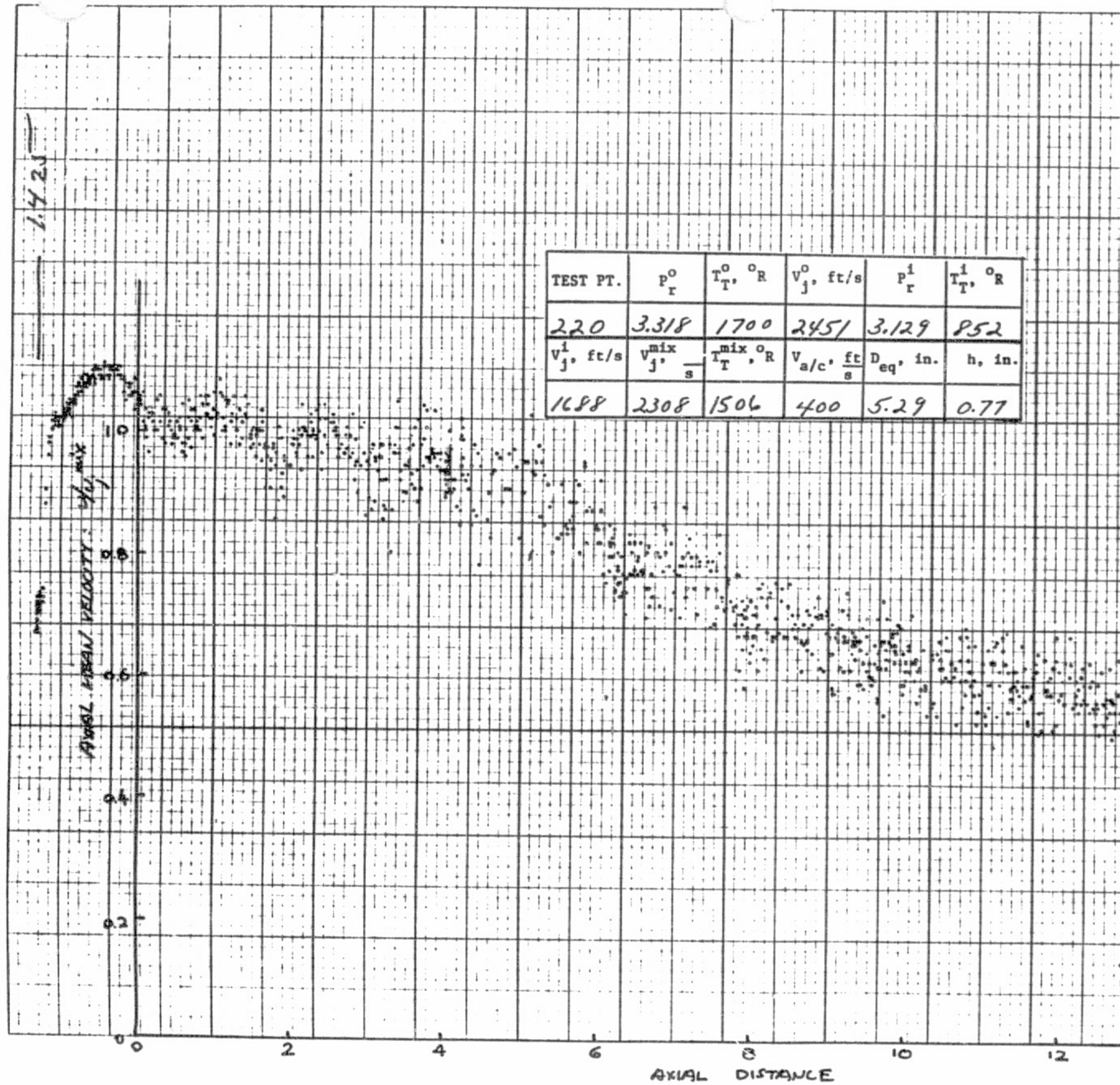
AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT; Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
220	3.318	1700	2451	3.129	852
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1688	2308	1506	400	5.29	0.77



776

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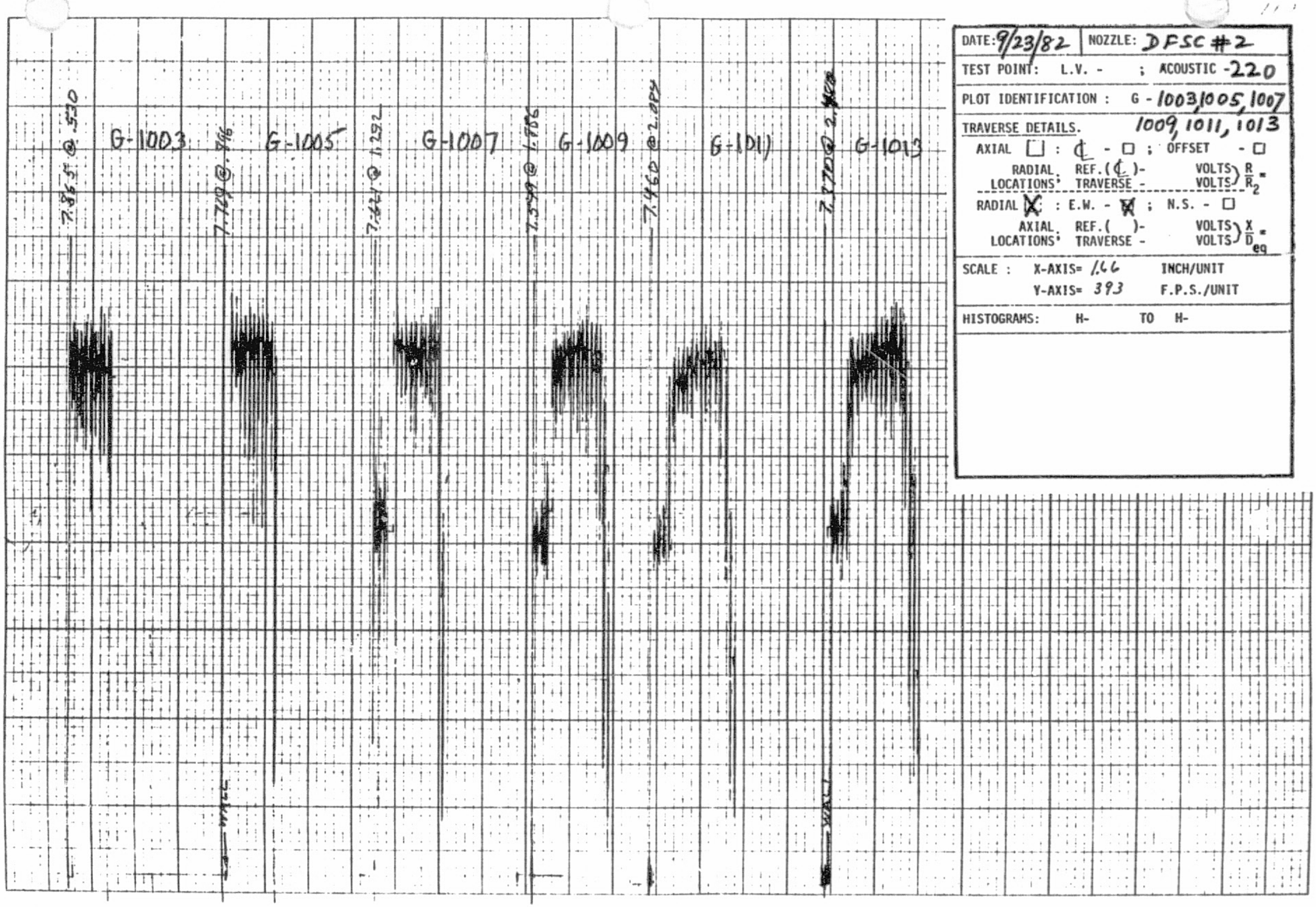
DATE: 9/23/82	NOZZLE: DFSC #2
TEST POINT: L.V. - ; ACOUSTIC -220	
PLOT IDENTIFICATION : G - 1003, 1005, 1007, 1009, 1011, 1013	
TRAVERSE DETAILS.	
AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐	
RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =	
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐	
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =	
SCALE : X-AXIS= 1.66 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK

DATE: 9/23/82	NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC -220

PLOT IDENTIFICATION : G - 1004, 1006, 1008, 1010, 1012, 1014

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

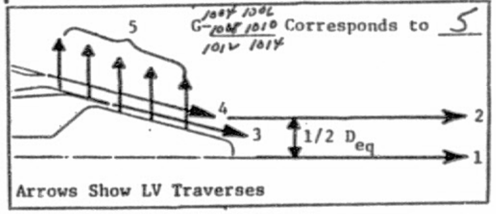
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

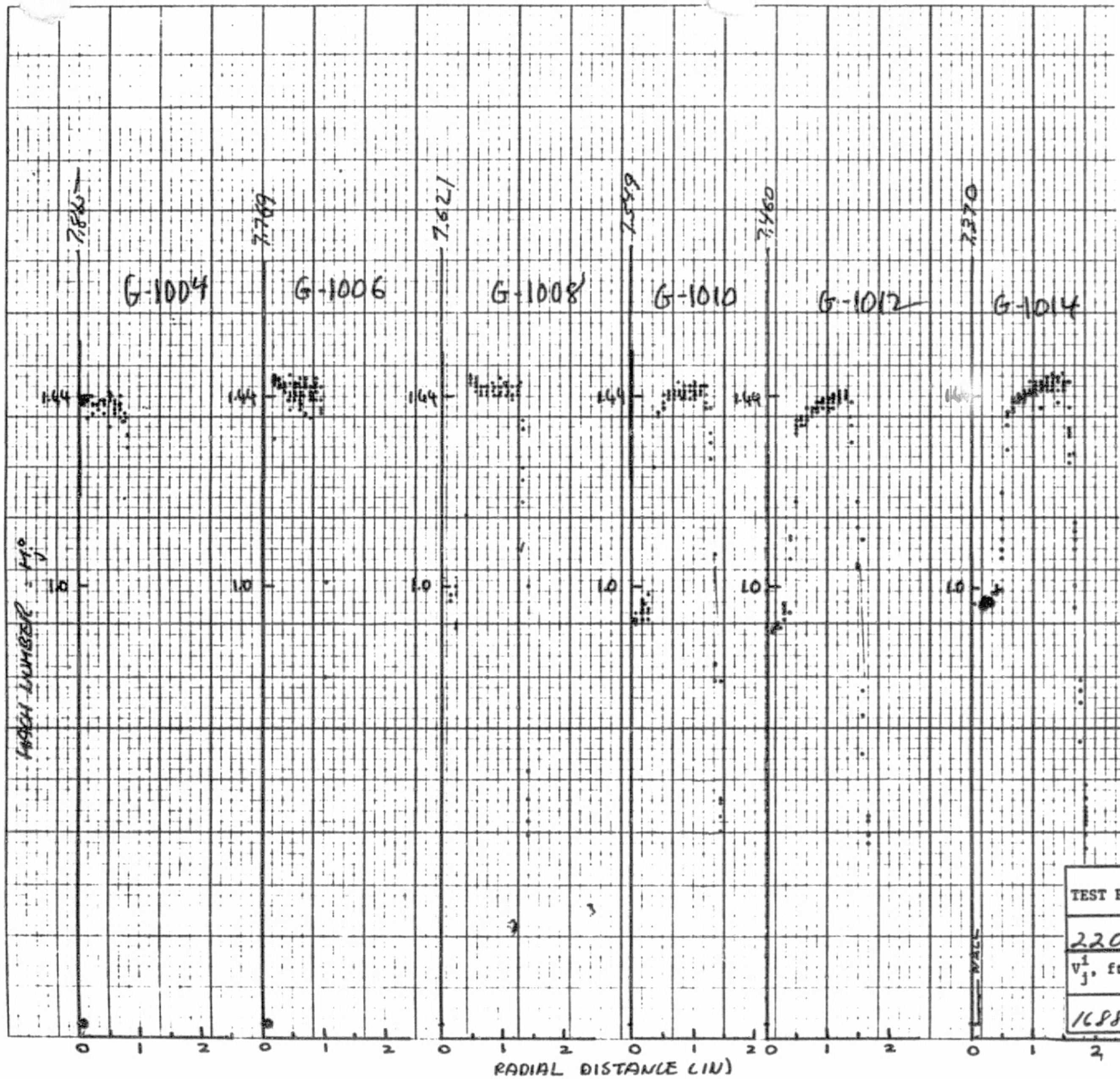
AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-





TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
220	3.318	1700	2451	3.129	852
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1688	2308	1506	400	5.29	0.77

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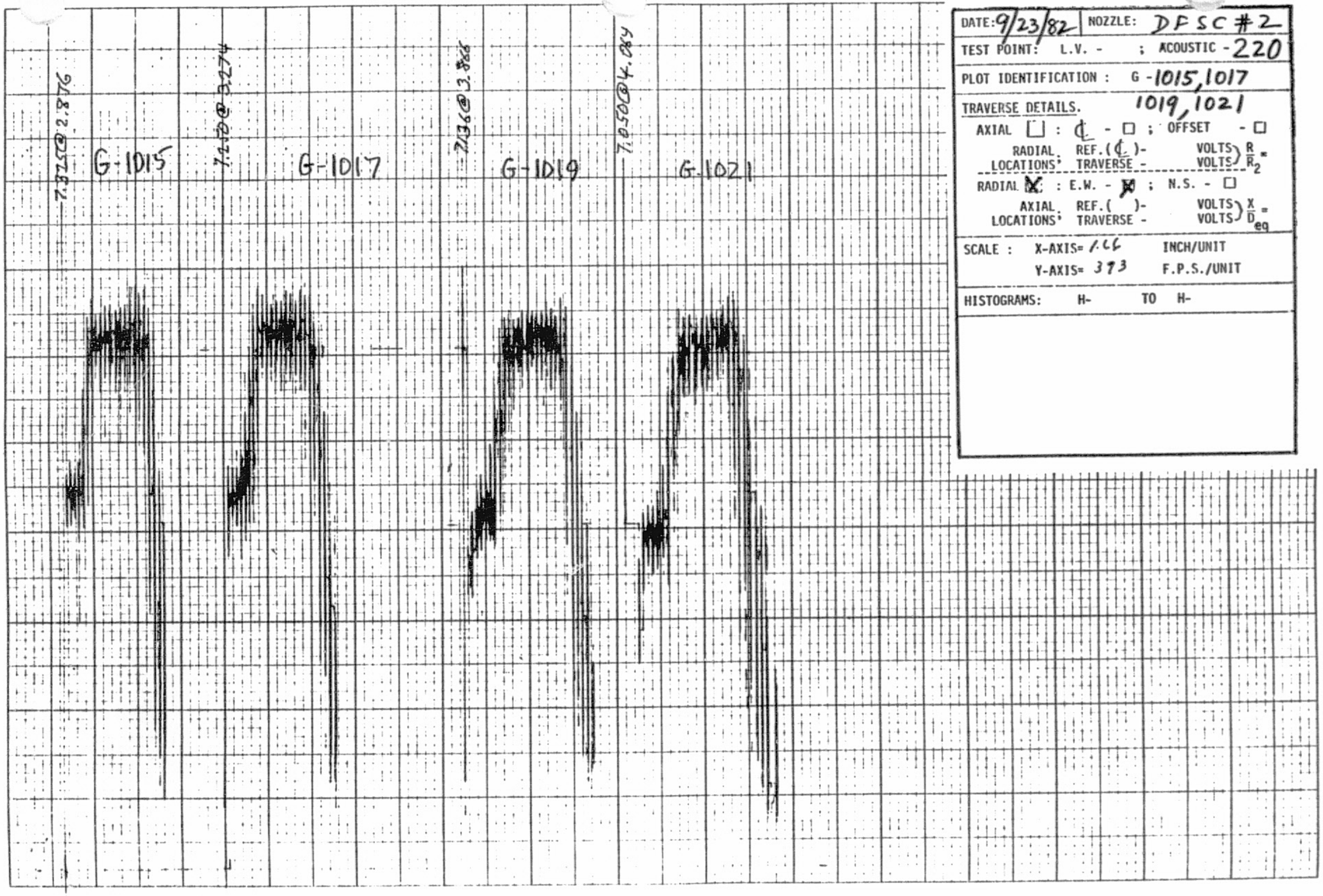


DATE: 9/23/82 | NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 220

PLOT IDENTIFICATION : G - 1015, 1017 1019, 1021

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 220

PLOT IDENTIFICATION : G - 1016, 1018, 1020, 1022

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

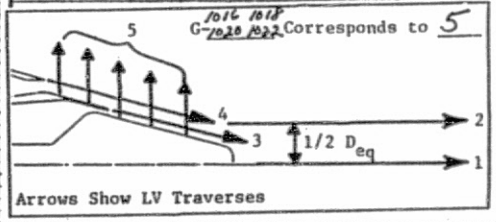
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS; REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
220	3.318	1700	2451	3.129	852
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1688	2308	1506	400	5.29	0.77

NO. XY 1101

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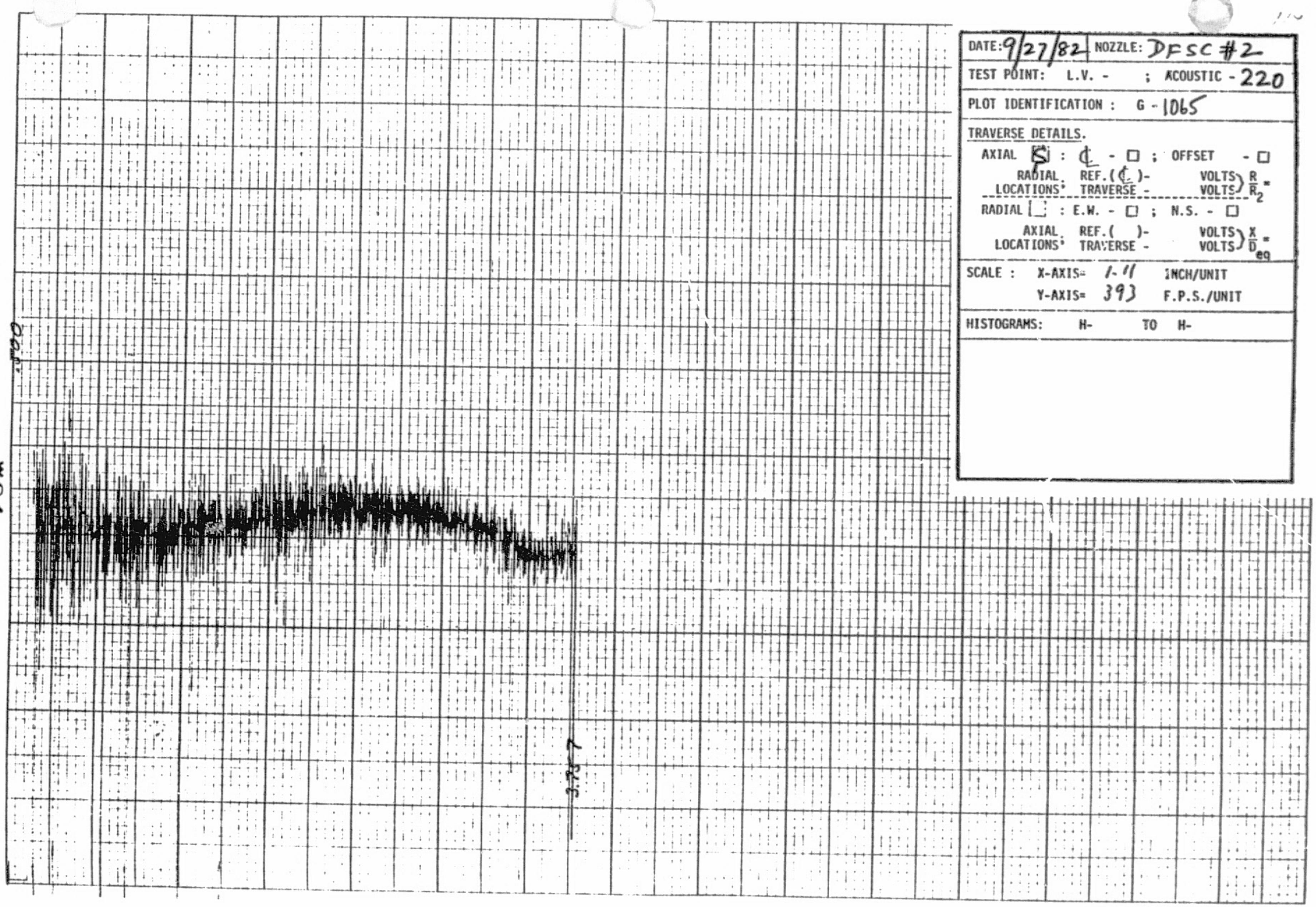

DATE: 9/27/82	NOZZLE: DFSC #2
TEST POINT: L.V. - ; ACOUSTIC - 220	
PLOT IDENTIFICATION : G - 1065	

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS) VOLTS) $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS) VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

781

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DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 220

PLOT IDENTIFICATION : G - 1066

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)-TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )-TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

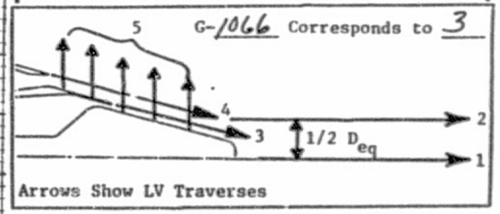
SCALE : X-AXIS= 1.81 INCH/UNIT

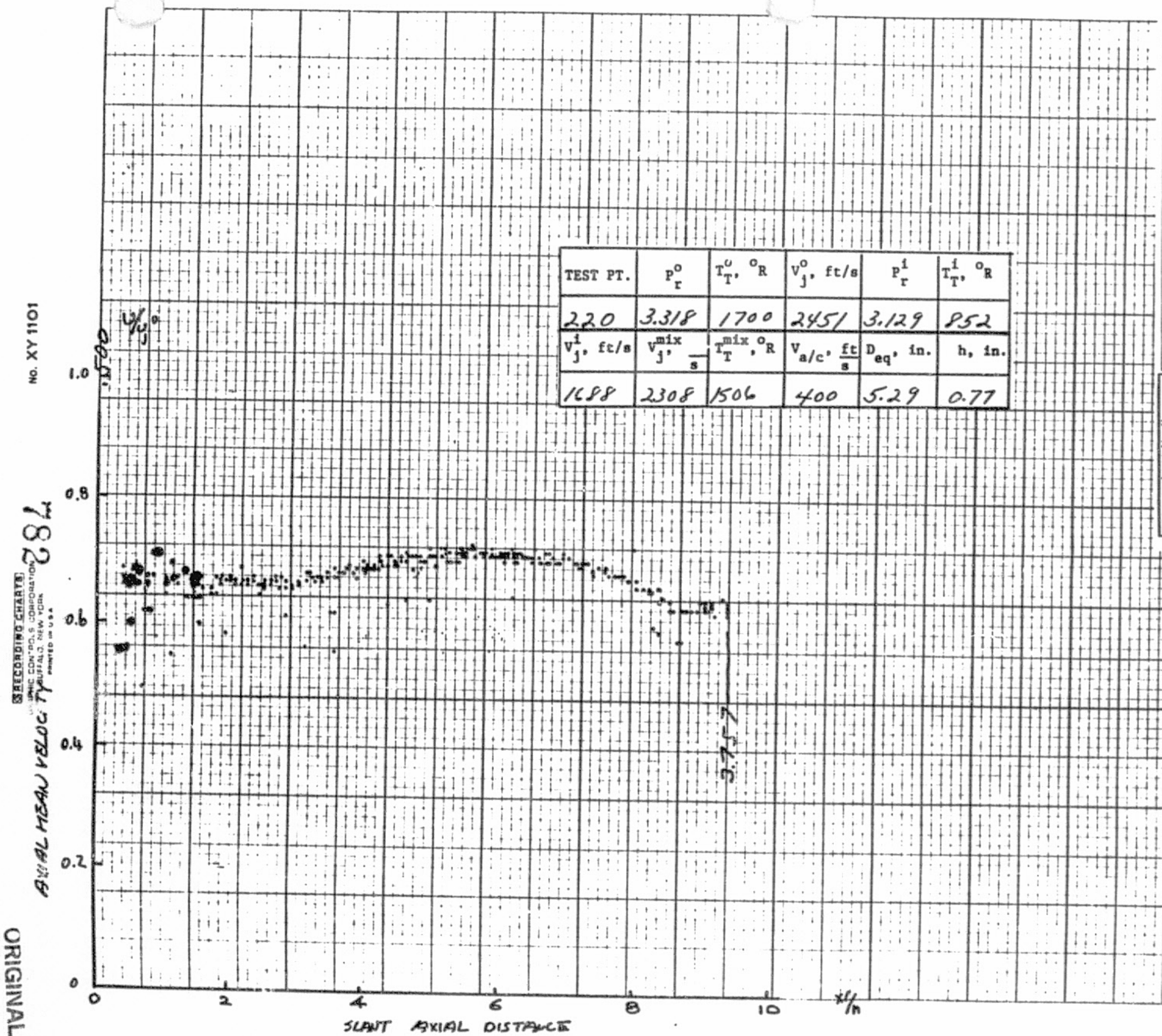
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1066 Corresponds to 3

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
220	3.318	1700	2451	3.129	852
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1688	2308	1506	400	5.29	0.77





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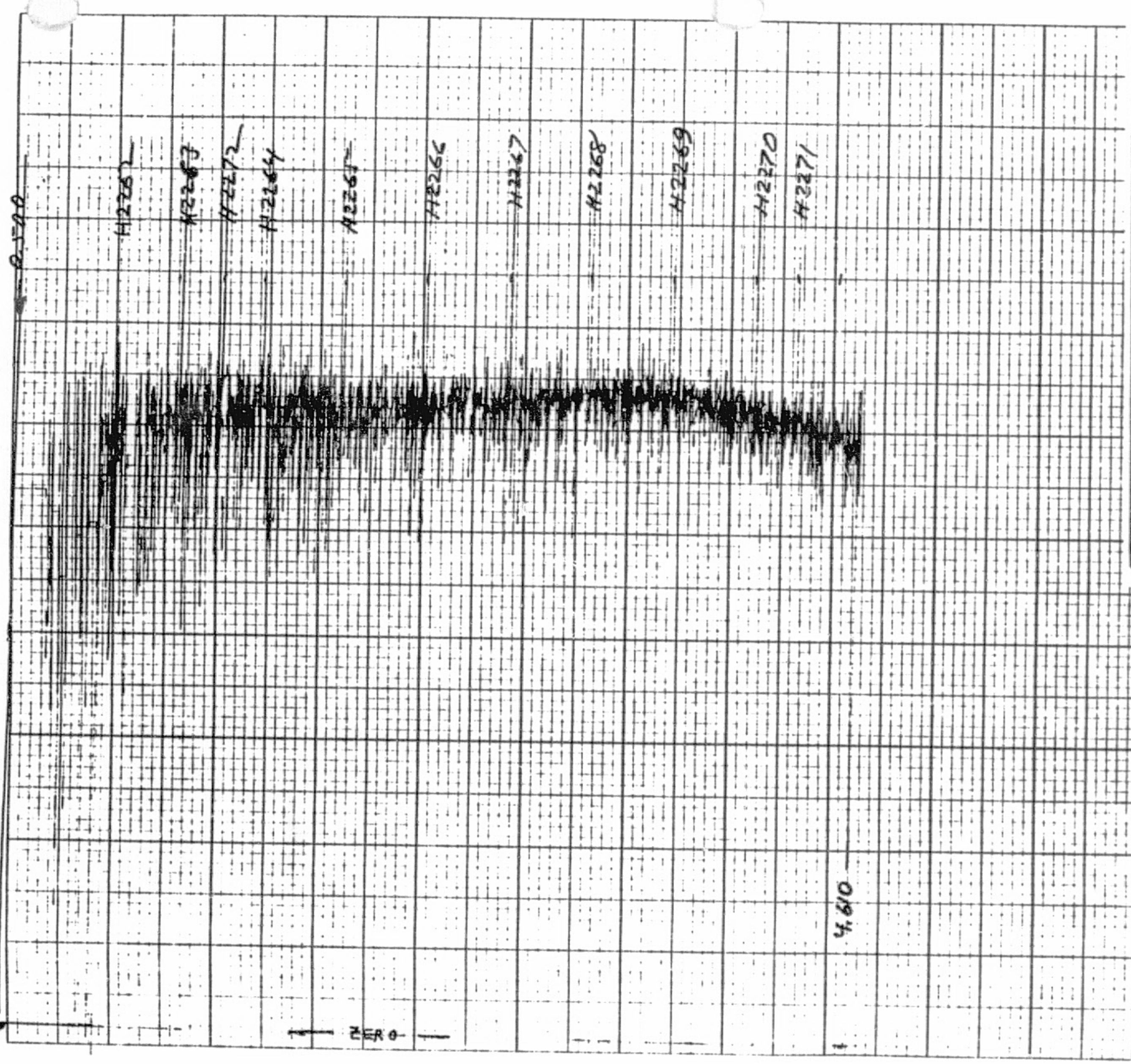
BUFFALO, N.Y.



DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 220

PLOT IDENTIFICATION : G - 1069

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- 2262 TO H- 2271

DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 220

PLOT IDENTIFICATION : G - 1070

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

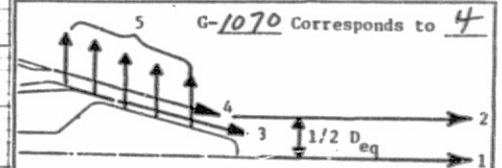
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

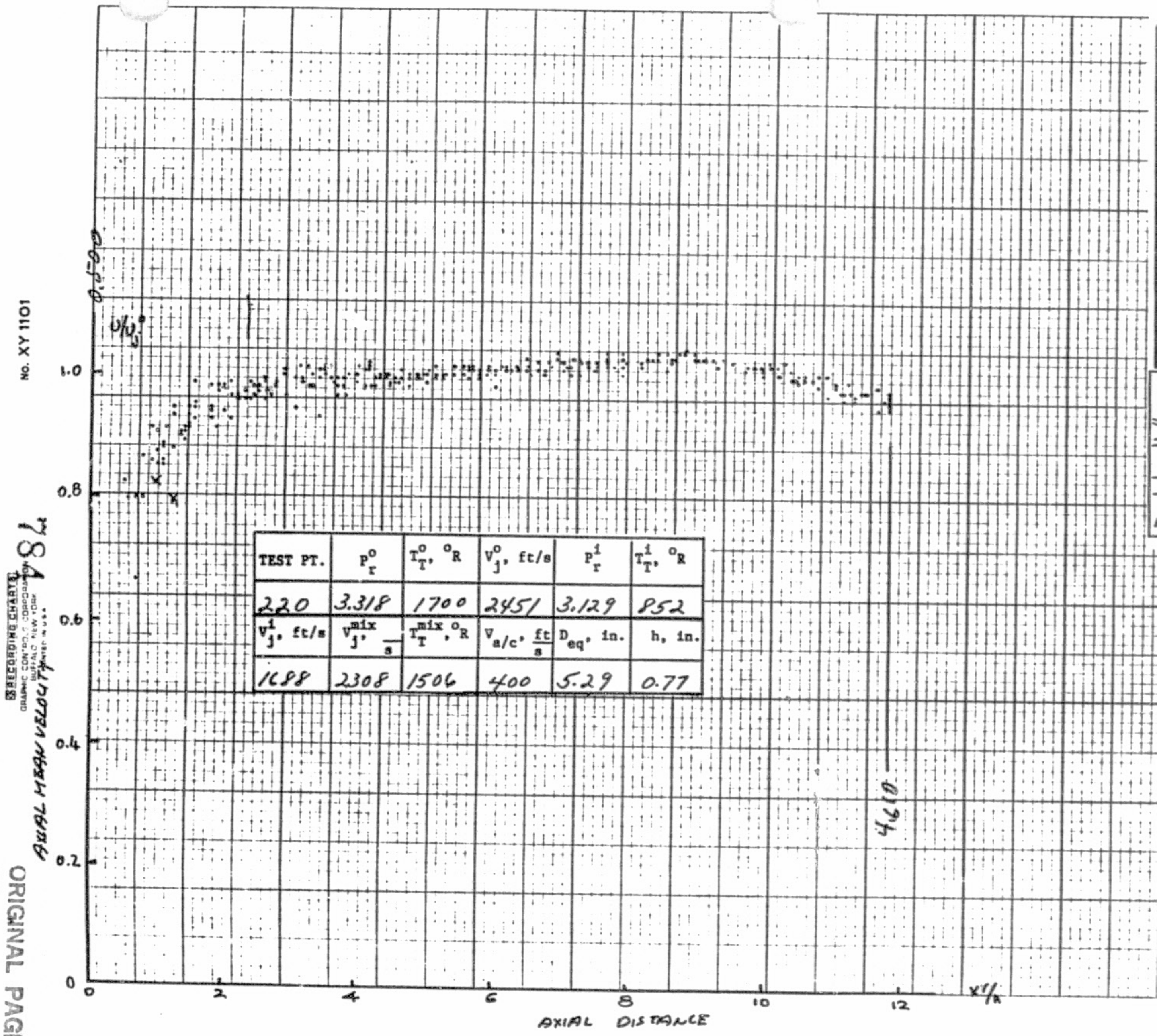
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

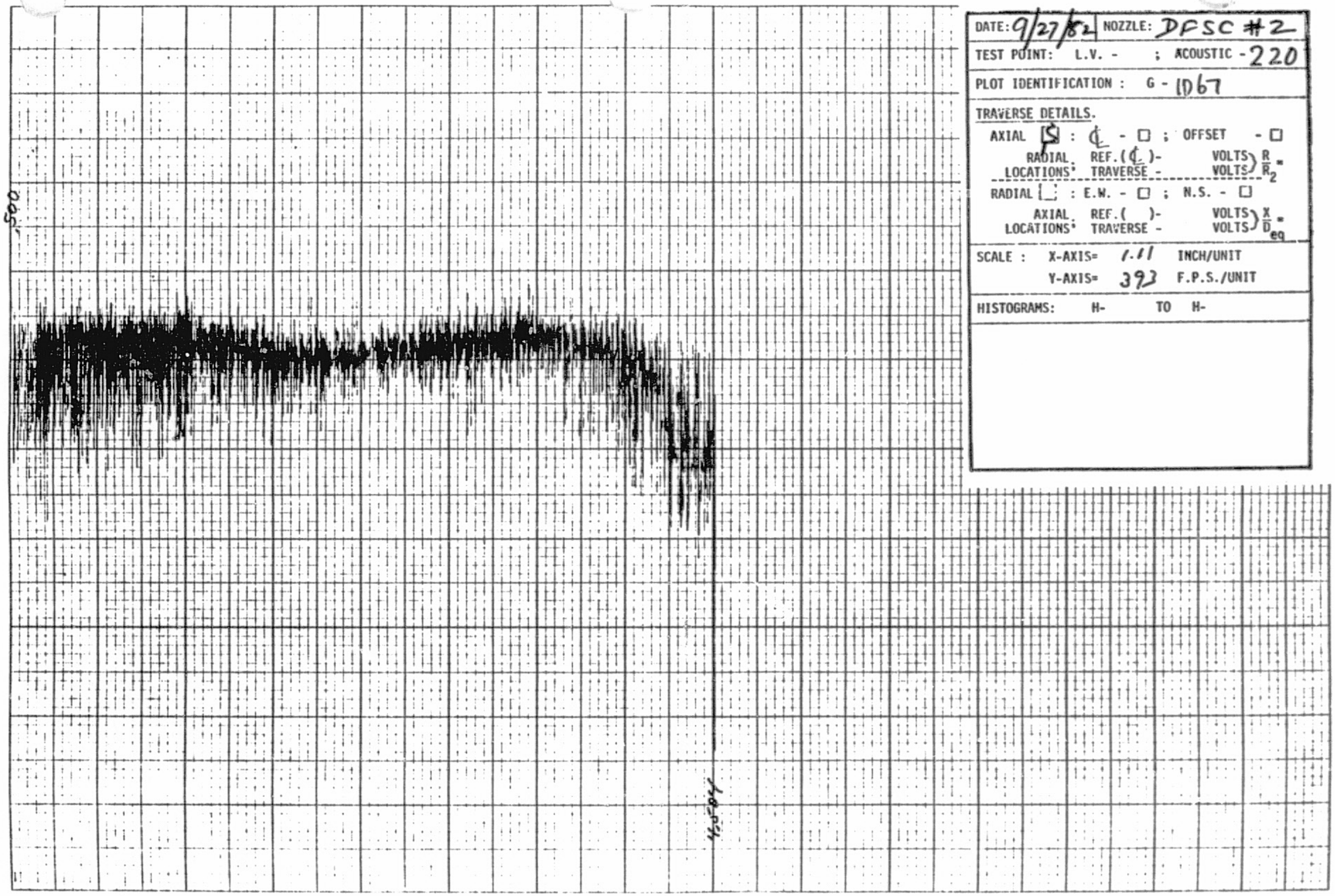
G-1070 Corresponds to 4





TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
220	3.318	1700	2451	3.129	852
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1688	2308	1506	400	5.29	0.77

784



DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 220

PLOT IDENTIFICATION : G - 1D67

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

785

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DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 220

PLOT IDENTIFICATION : G - 1068

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

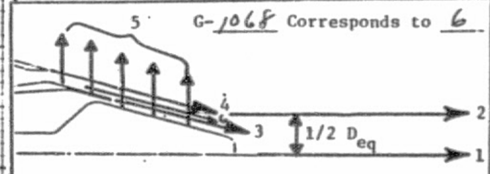
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

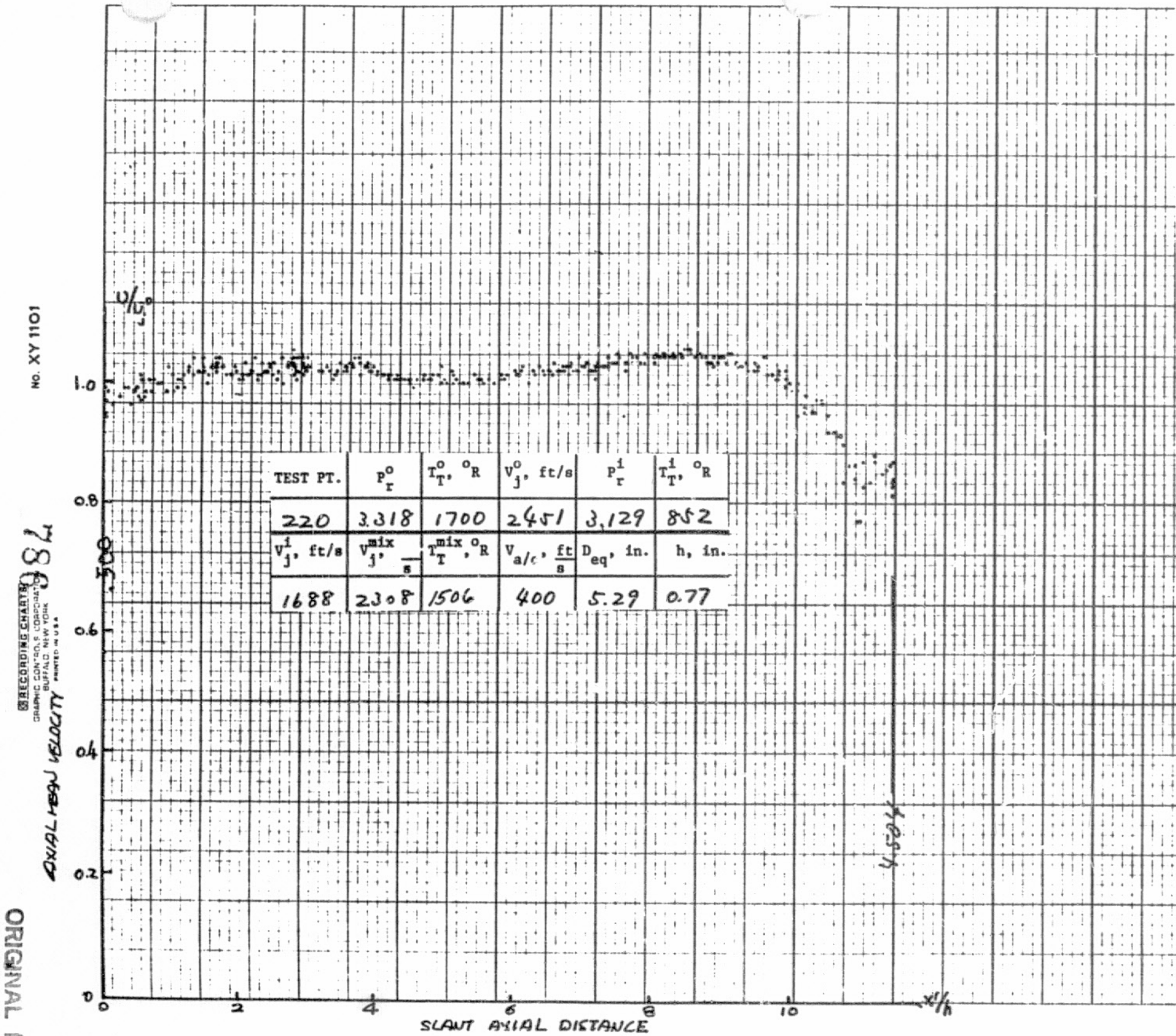
AXIAL LOCATIONS: REF ( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-





TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
220	3.318	1700	2451	3.129	852
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1688	2308	1506	400	5.29	0.77

DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 1219

PLOT IDENTIFICATION : G - 936

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- 6.686 VOLTS; TRAVERSE - 6.686 VOLTS; $\frac{R}{R_2}$ =

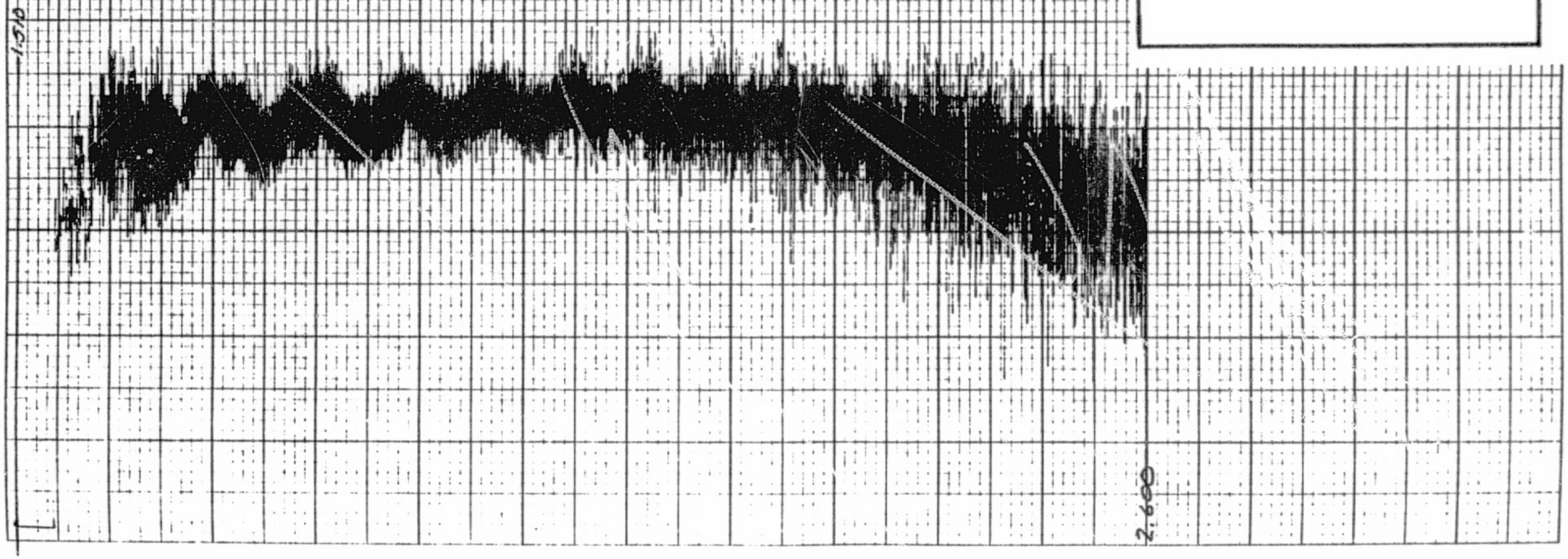
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



787

No. XY 1101

RECORDING CHARTS

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DATE: 9/23/82 NOZZLE: DFSC#2

TEST POINT: L.V. - ; ACOUSTIC - 1219

PLOT IDENTIFICATION : G - 938

TRAVERSE DETAILS.

AXIAL [X] : ℄ - X ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- 6.686 VOLTS; TRAVERSE - 6.686 VOLTS; R/R_2 =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS; X/D_{eq} =

SCALE : X-AXIS= 7.08 INCH/UNIT

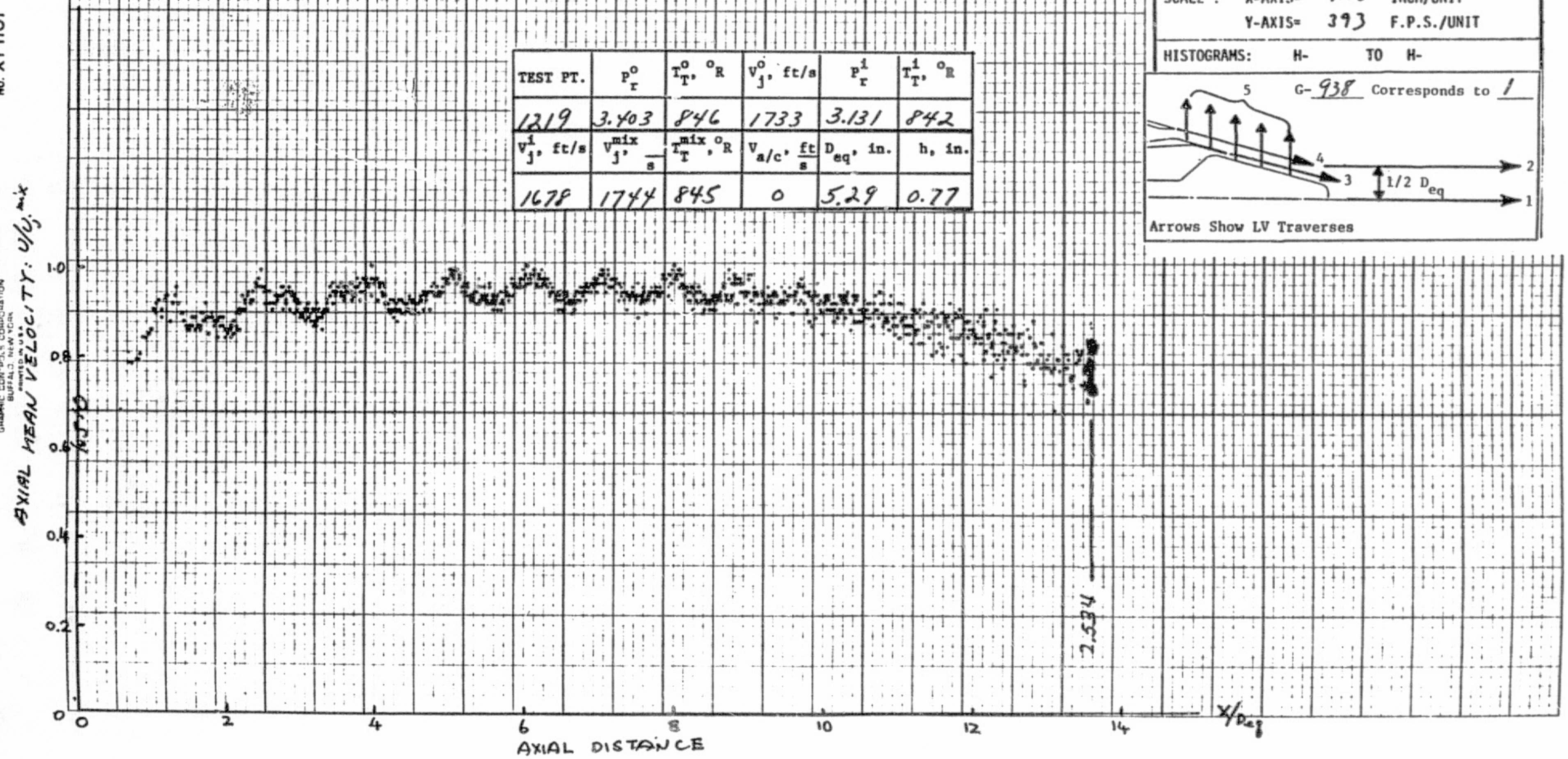
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G- 938 Corresponds to 1

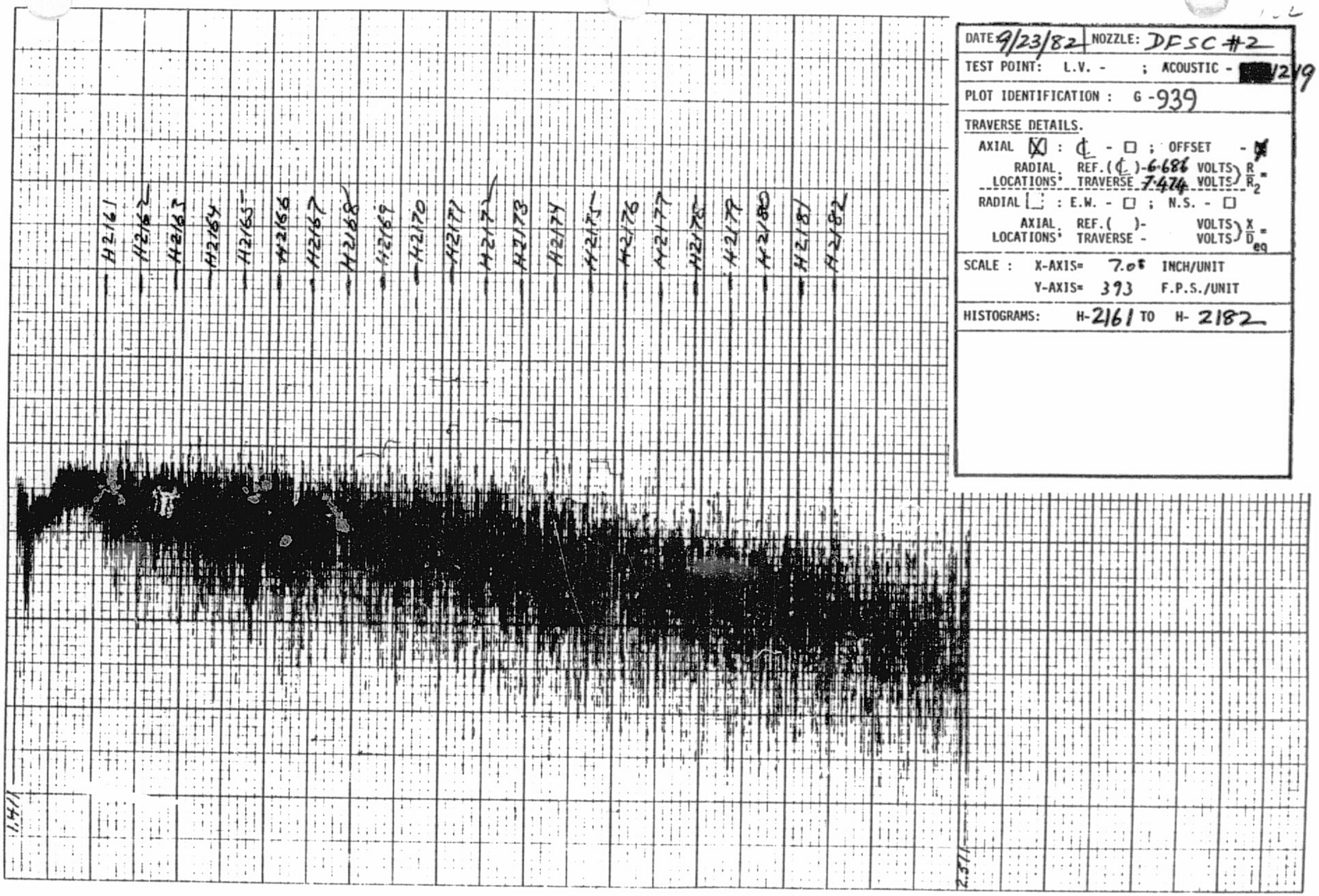
Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1219	3.403	846	1733	3.131	842
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1678	1744	845	0	5.29	0.77



788

789



DATE 9/23/82	NOZZLE: DFSC #2
TEST POINT: L.V. - ; ACOUSTIC - [redacted]1249	
PLOT IDENTIFICATION : G-939	

TRAVERSE DETAILS.

AXIAL [X] : ℄ - □ ; OFFSET - [X]

RADIAL LOCATIONS: REF.(℄)-6.686 VOLTS; TRAVERSE 7.474 VOLTS } $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - □ ; N.S. - □

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS } $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H-2161 TO H-2182

DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC -1219

PLOT IDENTIFICATION : G-940

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)-6.686 VOLTS; TRAVERSE -7.474 VOLTS; R/R_2 =

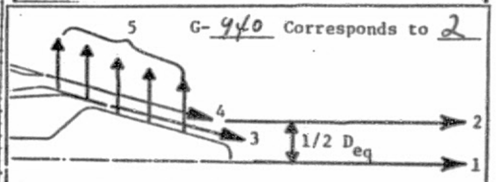
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS; X/D_{eq} =

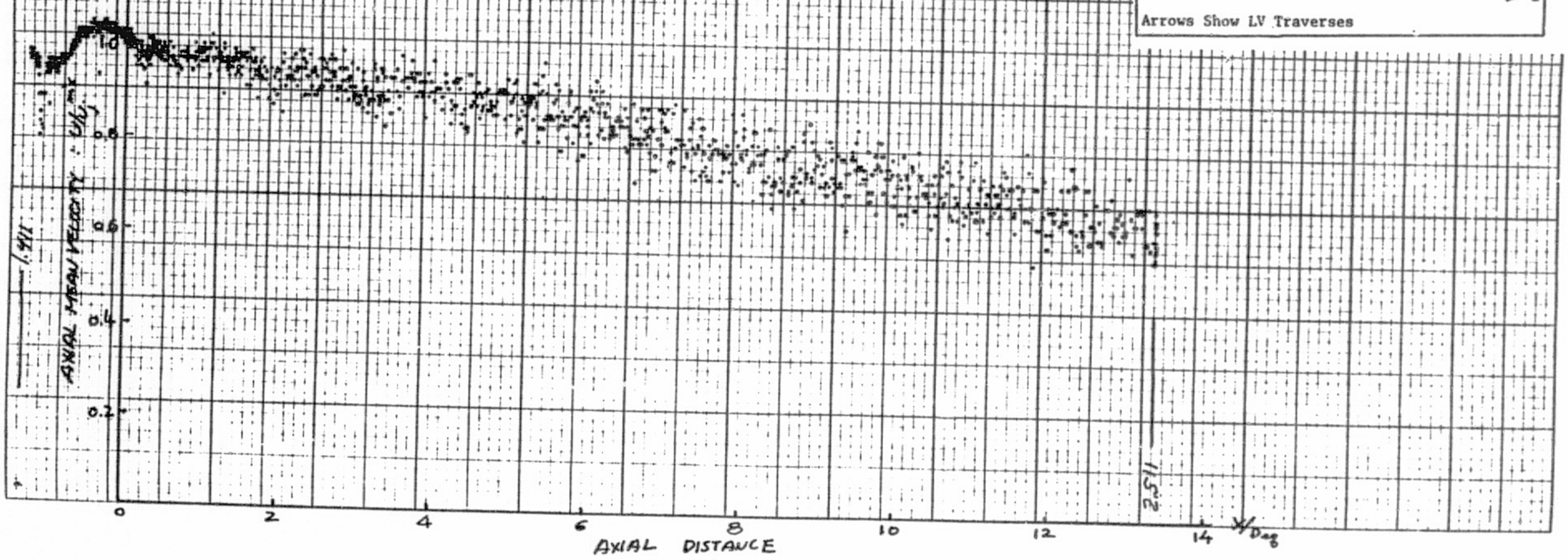
SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1219	3.403	846	1733	3.131	842
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1678	1744	845	0	5.29	0.77



NO. XY 1101

790

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

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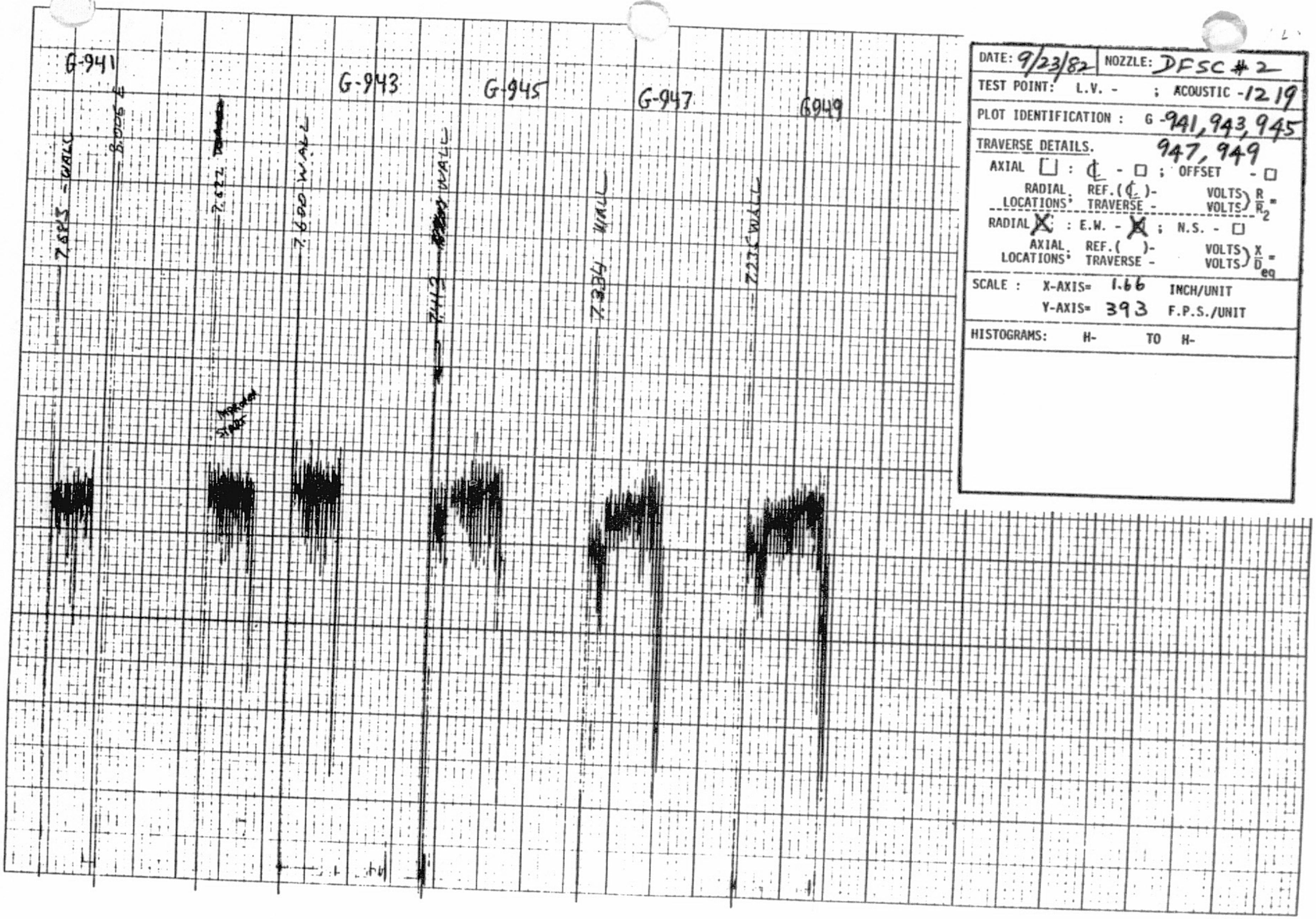
DATE: 9/23/82 | NOZZLE: DFSC #2
TEST POINT: L.V. - ; ACOUSTIC -1219
PLOT IDENTIFICATION : G-941, 943, 945, 947, 949
TRAVERSE DETAILS.
AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐
RADIAL LOCATIONS: REF. (℄)- VOLTS; TRAVERSE - VOLTS; $\frac{R}{R_2}$ =
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
AXIAL LOCATIONS: REF. ( )- VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =
SCALE : X-AXIS= 1.66 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT
HISTOGRAMS: H- TO H-



NO. XY 1101

791

RECORDING CHARTS
GRAPHIC CONTROLS CORPORATION
BUFFALO NEW YORK
PRINTED IN U.S.A.

DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 1219

PLOT IDENTIFICATION : G - 942, 944, 946, 948, 950

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

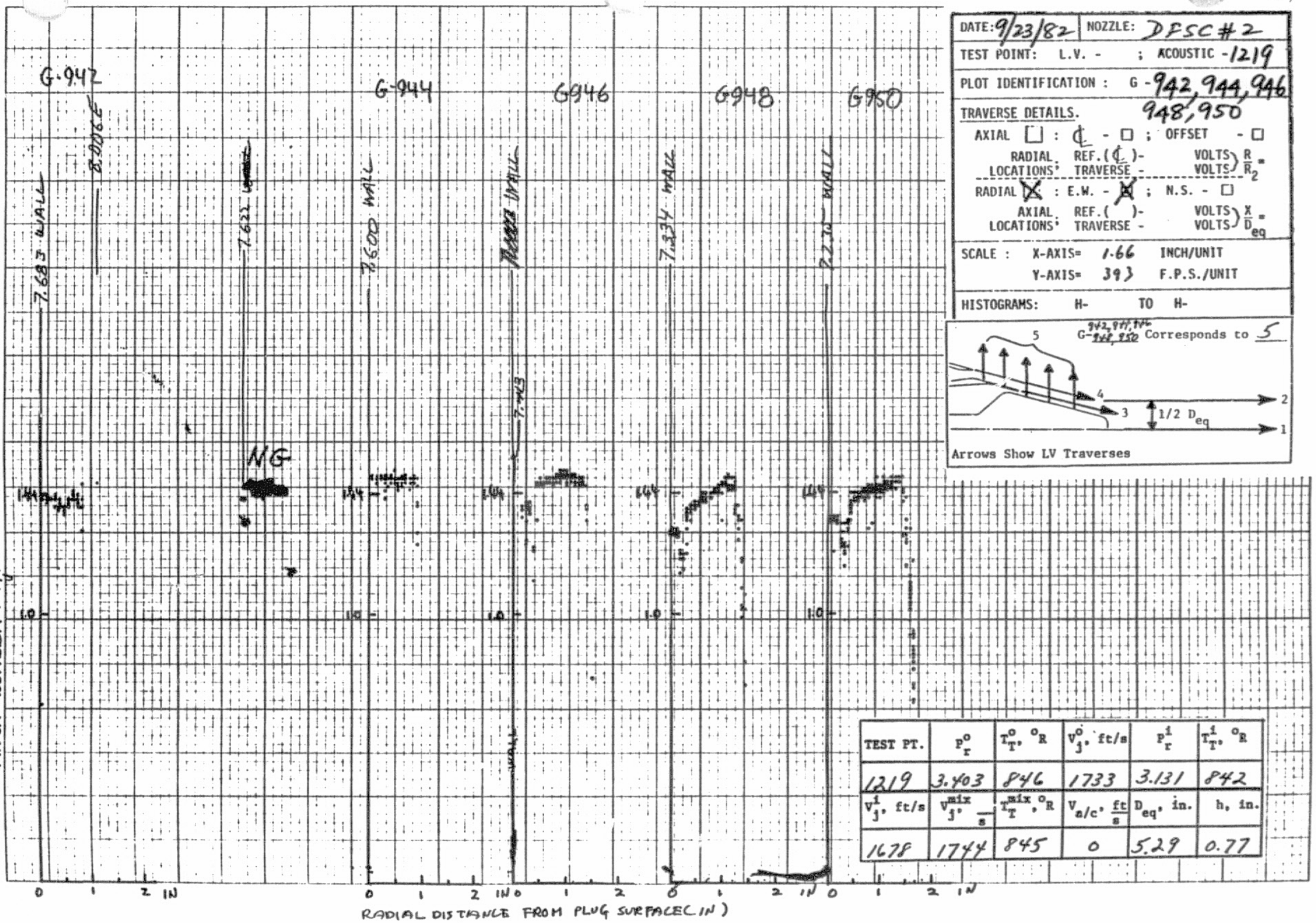
AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-942, 944, 946, 948, 950 Corresponds to 5



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1219	3.403	846	1733	3.131	842
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1678	1744	845	0	5.29	0.77

No. XY 1101

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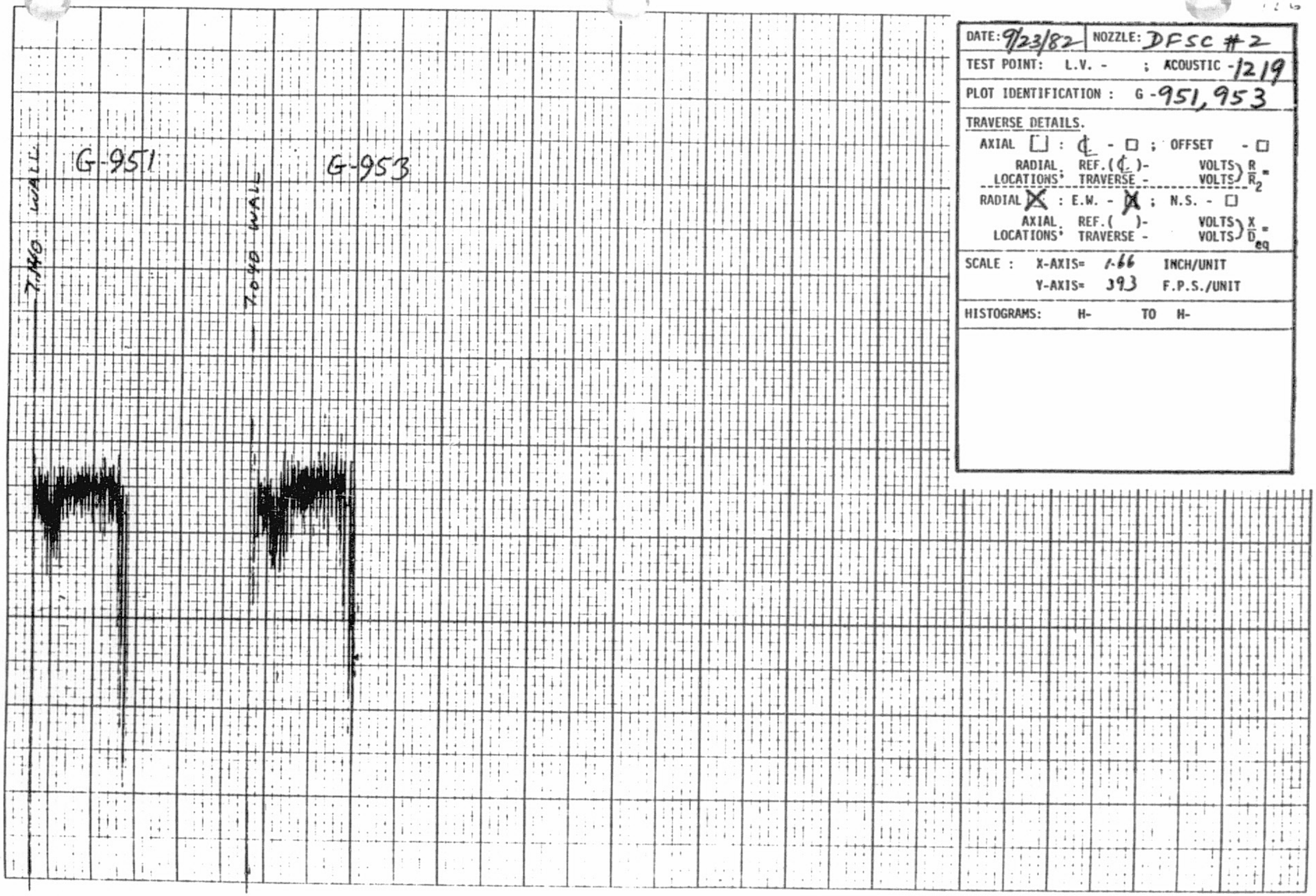


DATE: 9/23/82	NOZZLE: DFSC #2
TEST POINT: L.V. - ; ACOUSTIC - 1219	
PLOT IDENTIFICATION : G - 951, 953	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF. (℄) - TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS; REF. ( ) - TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC -1219

PLOT IDENTIFICATION : G -952, 954

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

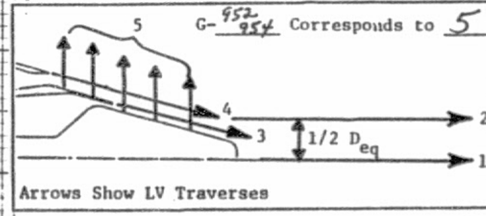
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

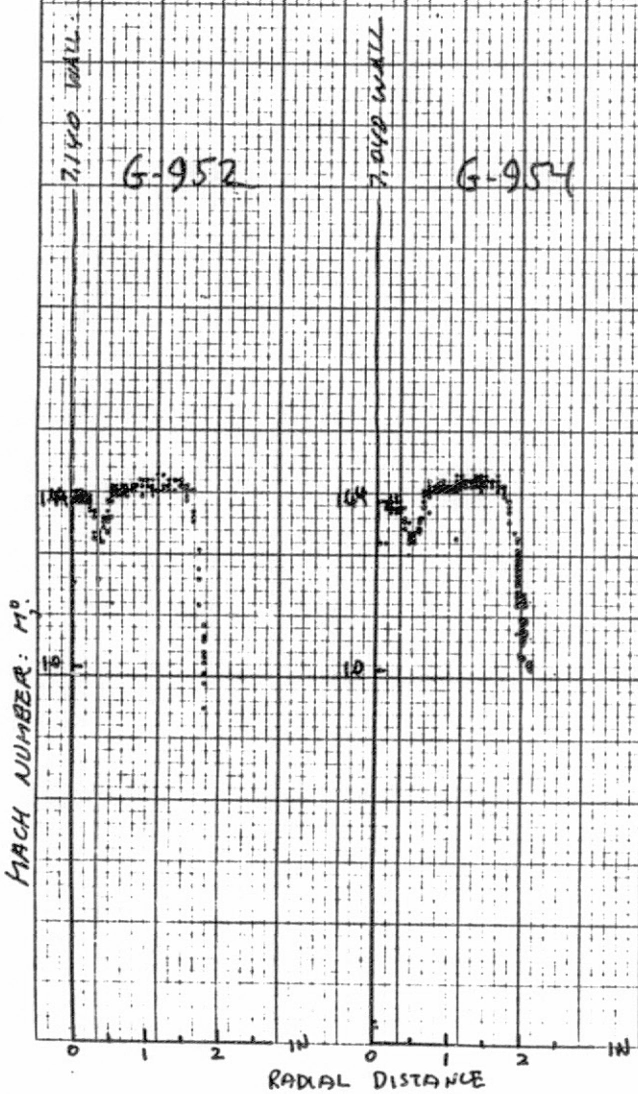
AXIAL LOCATIONS; REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

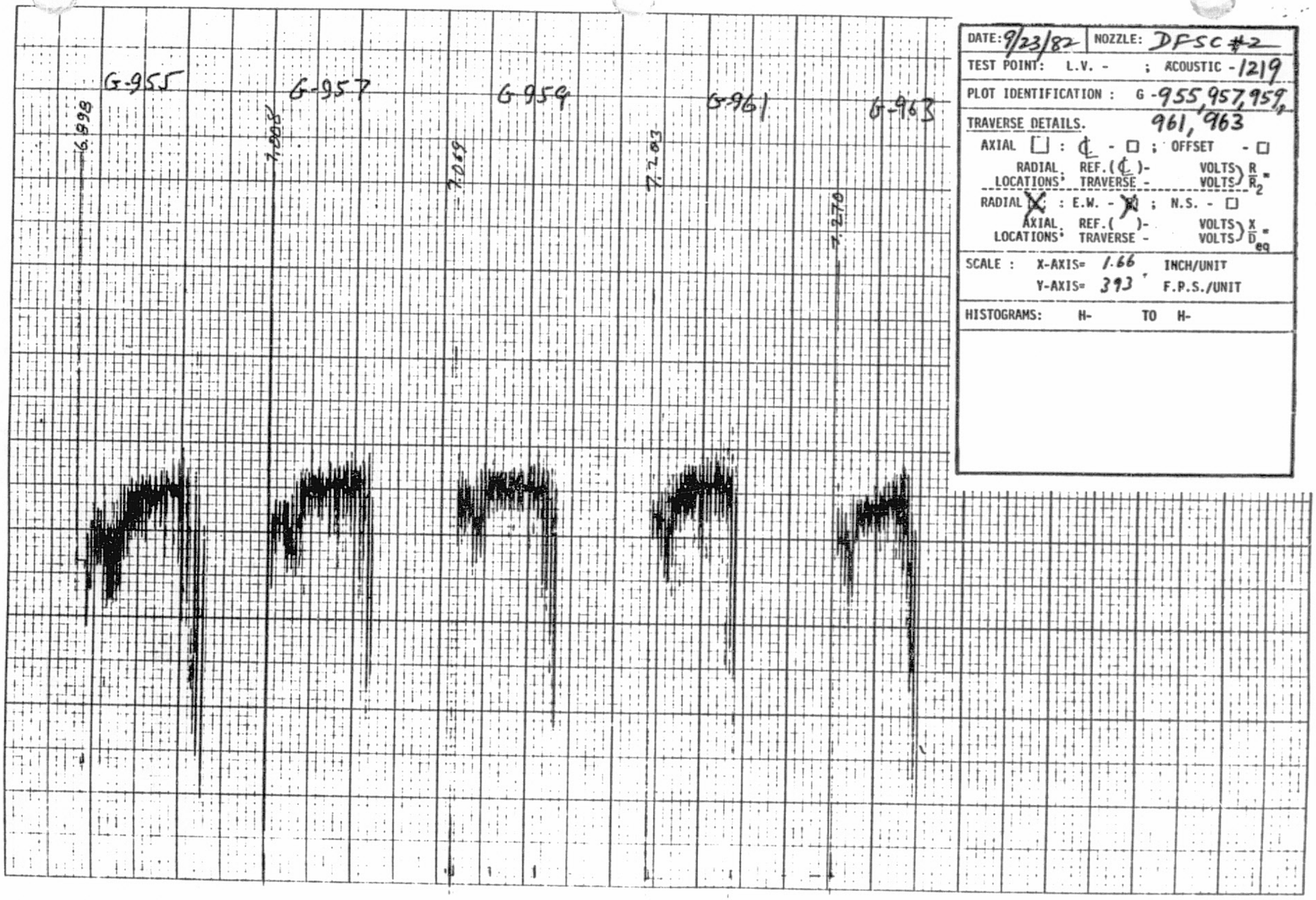
HISTOGRAMS: H- TO H-





TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1219	3.403	846	1733	3.131	842
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1678	1744	845	0	5.29	0.77

794



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No. XY 1101

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO NEW YORK PRINTED IN U.S.A.

DATE: 9/23/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 1219

PLOT IDENTIFICATION : G - 956, 958, 960, 962, 964

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

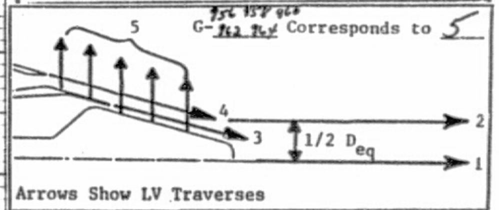
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1219	3.403	846	1733	3.131	842
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1678	1744	845	0	5.29	0.77

NO. XY 1101

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RECORDING CHARTS GRAPHIC CONTROLS BUFFALO, NEW YORK

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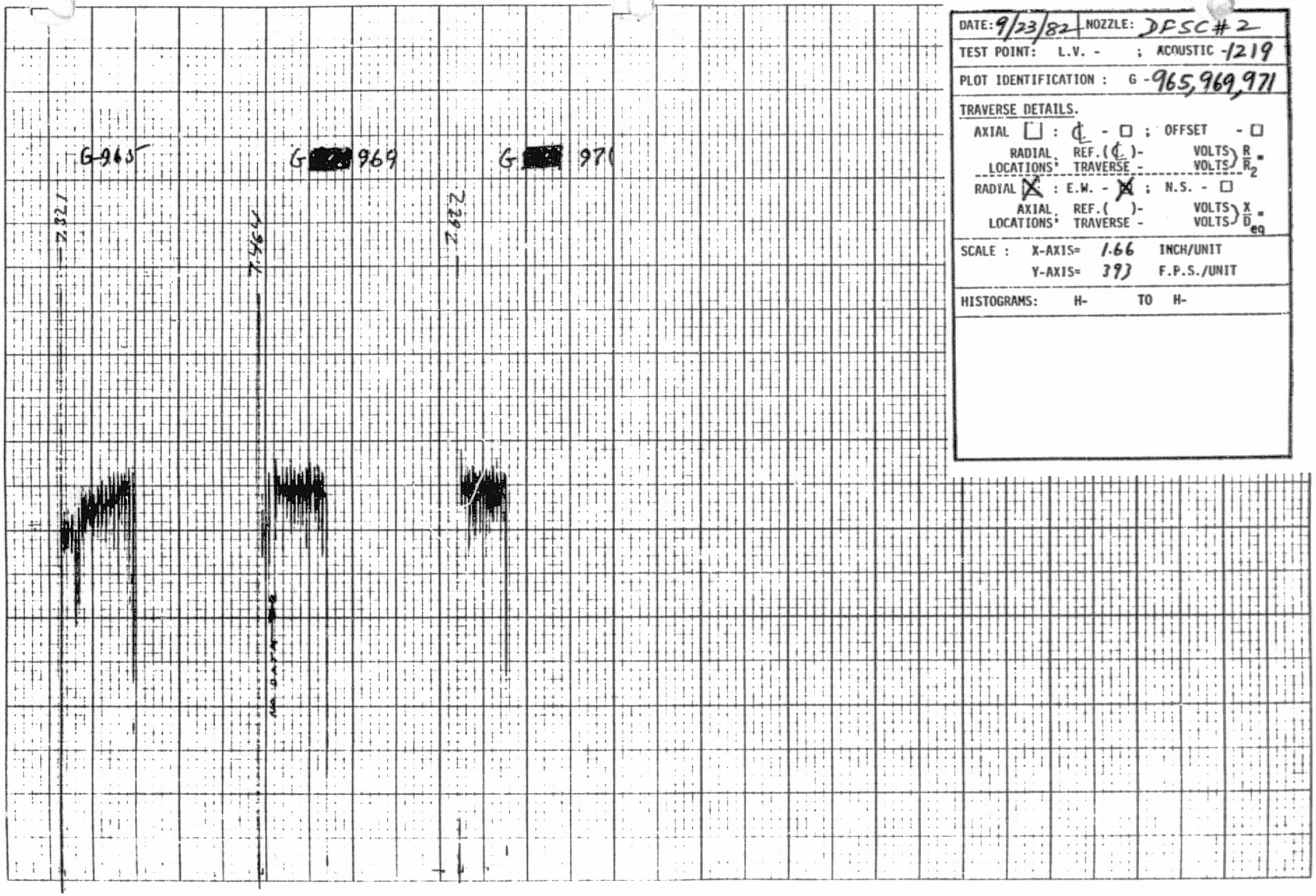


DATE: 9/23/82	NOZZLE: DFSC#2
TEST POINT: L.V. - ; ACOUSTIC -1219	
PLOT IDENTIFICATION : G -965,969,971	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS; REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

131

DATE: 9/23/82	NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 1219

PLOT IDENTIFICATION : G - 966, 970, 972

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

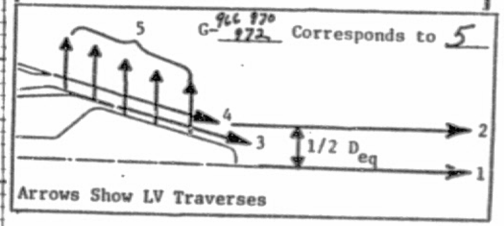
RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS) R/R₂ =

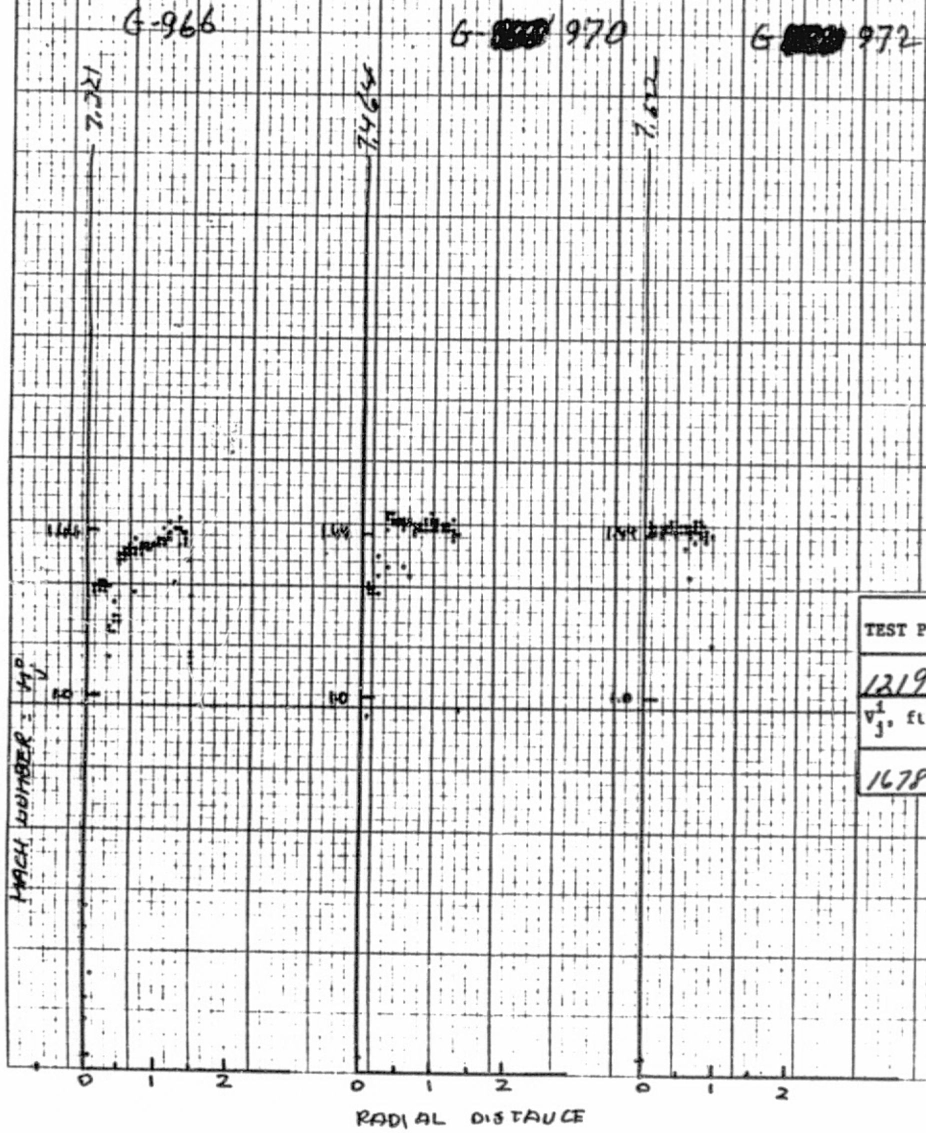
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS = 1.66 INCH/UNIT
Y-AXIS = 393 F.P.S./UNIT

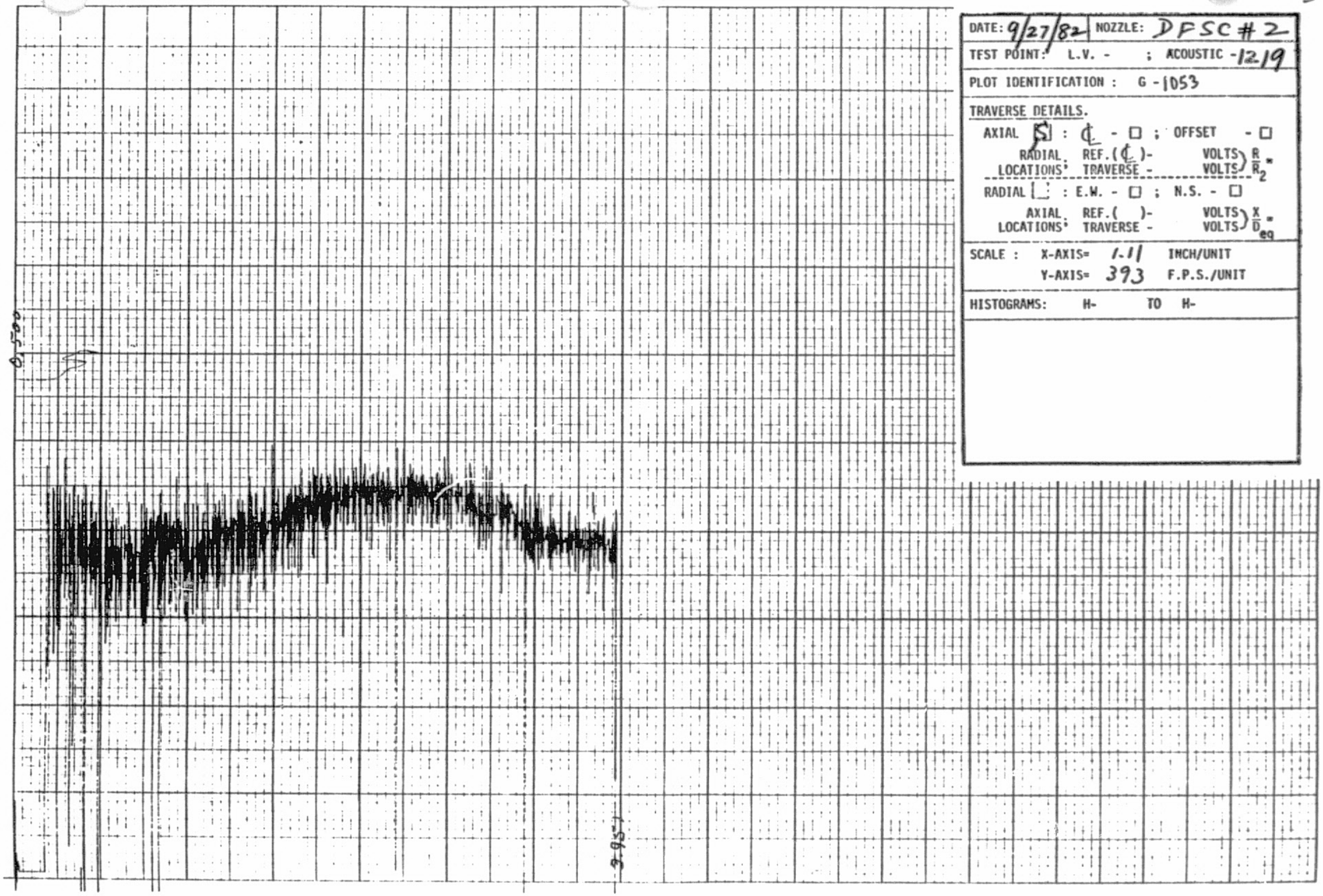
HISTOGRAMS: H- TO H-





TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1219	3.103	846	1733	3.131	842
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1678	1744	845	0	5.29	0.77

798



DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 1219

PLOT IDENTIFICATION : G - 1053

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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DATE: 9/27/82	NOZZLE: DFSC #2
TEST POINT: L.V. - ;	ACOUSTIC - 1219
PLOT IDENTIFICATION : G - 1054	

TRAVERSE DETAILS.

AXIAL [5] : ℄ - ☐ ; OFFSET - ☐

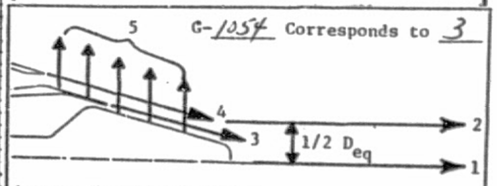
RADIAL LOCATIONS: REF.(℄)-TRAVERSE VOLTS/VOLTS) R/R_2 =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

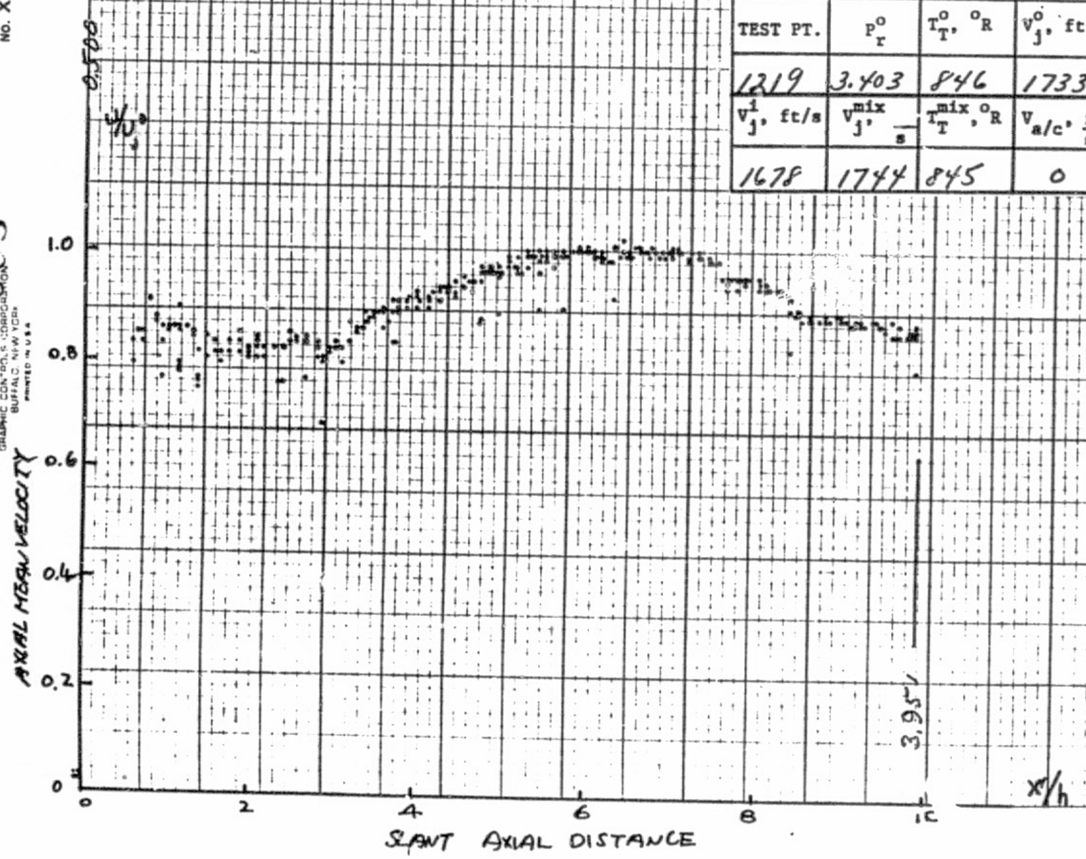
AXIAL LOCATIONS: REF.( )-TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1219	3.403	846	1733	3.131	842
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1678	1744	845	0	5.29	0.77



No. XY 1101

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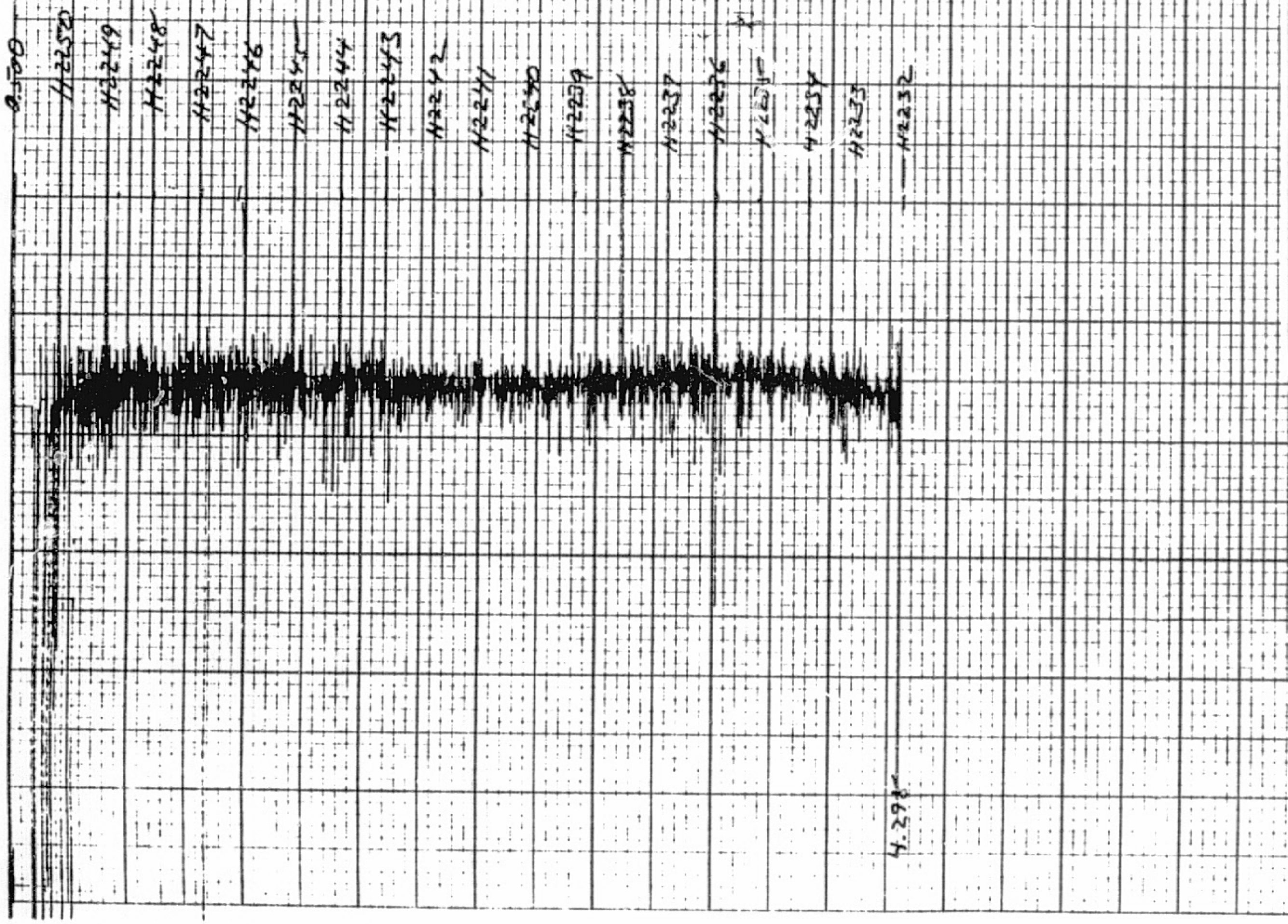
DATE: 9/27/82	NOZZLE: DFSC#2
TEST POINT: L.V. - ; ACOUSTIC - 1219	
PLOT IDENTIFICATION : G - 1057	
TRAVERSE DETAILS.	
AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐	
RADIAL LOCATIONS: REF. (℄) - TRAVERSE -	VOLTS / VOLTS $\frac{R}{R_2}$ =
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐	
AXIAL LOCATIONS: REF. ( ) - TRAVERSE -	VOLTS / VOLTS $\frac{X}{D_{eq}}$ =
SCALE : X-AXIS= 1.11 INCH/UNIT	Y-AXIS= 393 F.P.S./UNIT
HISTOGRAMS: H-2232 TO H-2250	



DATE: 9/27/82	NOZZLE: DFSC#2

TEST POINT: L.V. - ; ACOUSTIC - 1219

PLOT IDENTIFICATION : G - 1058

TRAVERSE DETAILS.

AXIAL [5] : ℄ - □ ; OFFSET - □

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL [ ] : E.W. - □ ; N.S. - □

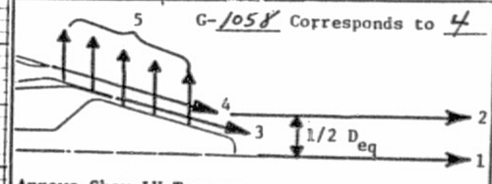
AXIAL LOCATIONS; REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

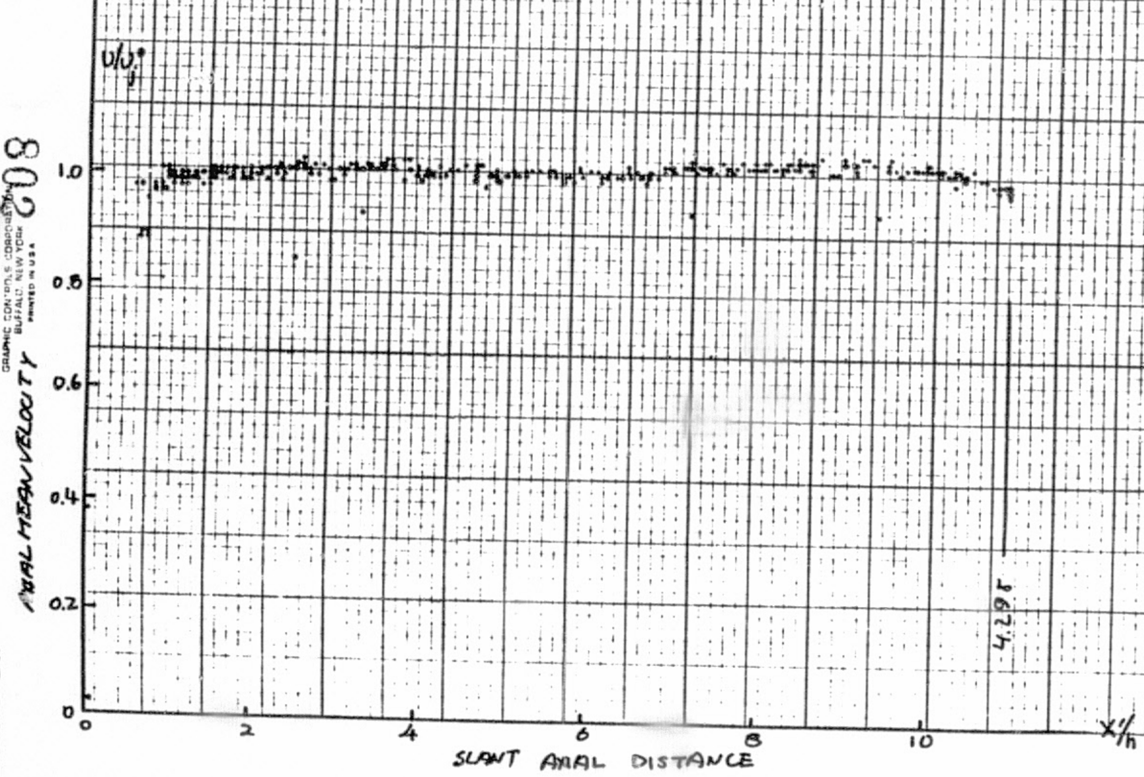
HISTOGRAMS: H- TO H-

G-1058 Corresponds to 4



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1219	3.403	846	1733	3.131	842
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1678	1744	845	0	5.29	0.77



802

DATE: 9/27/82 NOZZLE: DFSC#2

TEST POINT: L.V. - ; ACOUSTIC -1219

PLOT IDENTIFICATION : G - 1055

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

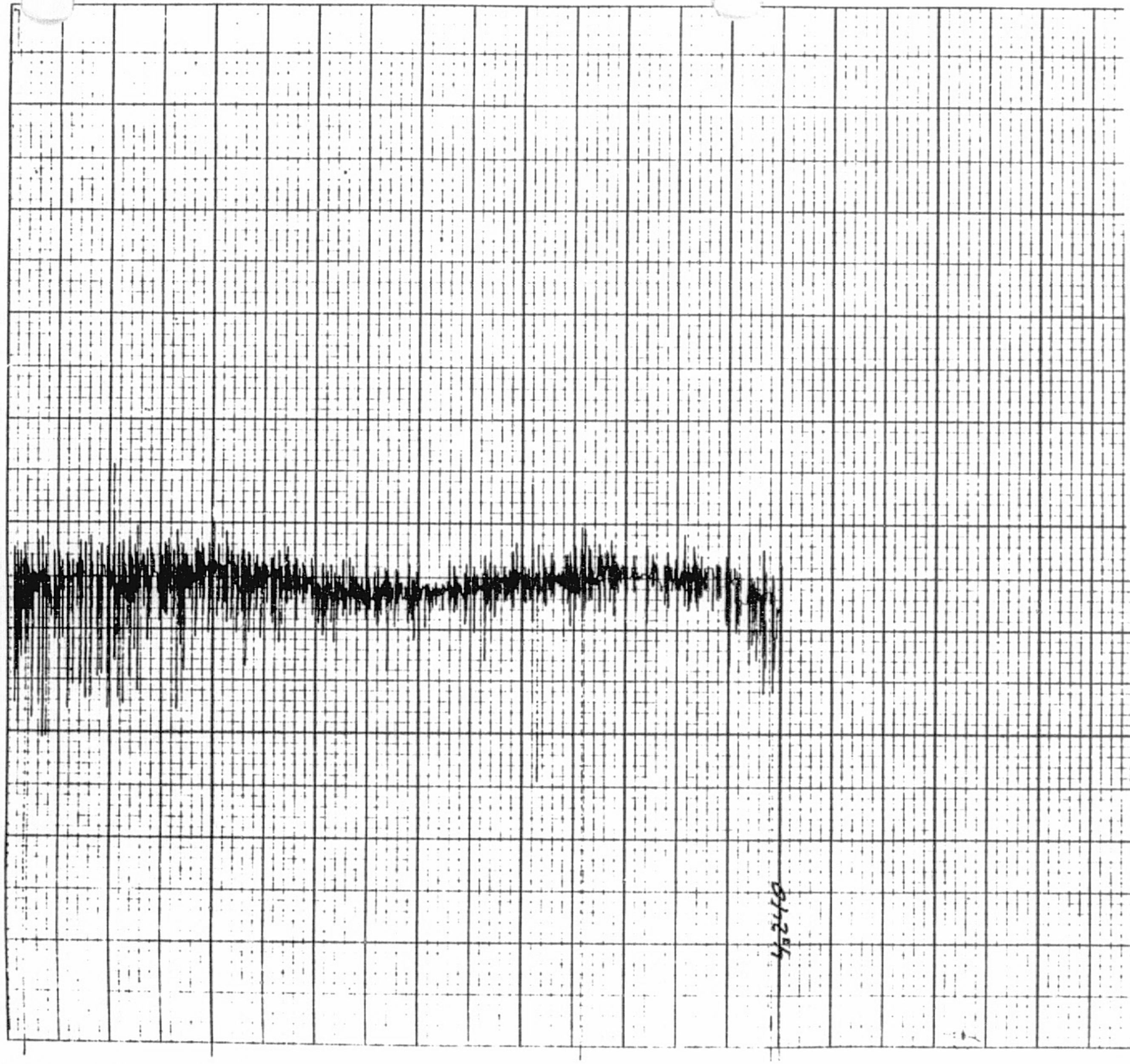
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



DATE: 9/27/82	NOZZLE: DFSC #2	
TEST POINT: L.V. -	; ACOUSTIC - 1219	
PLOT IDENTIFICATION : G - 1056		

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

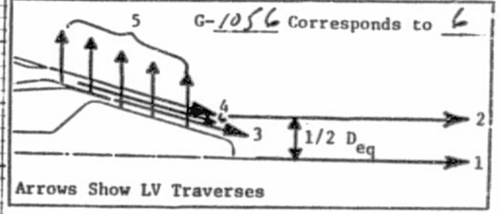
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

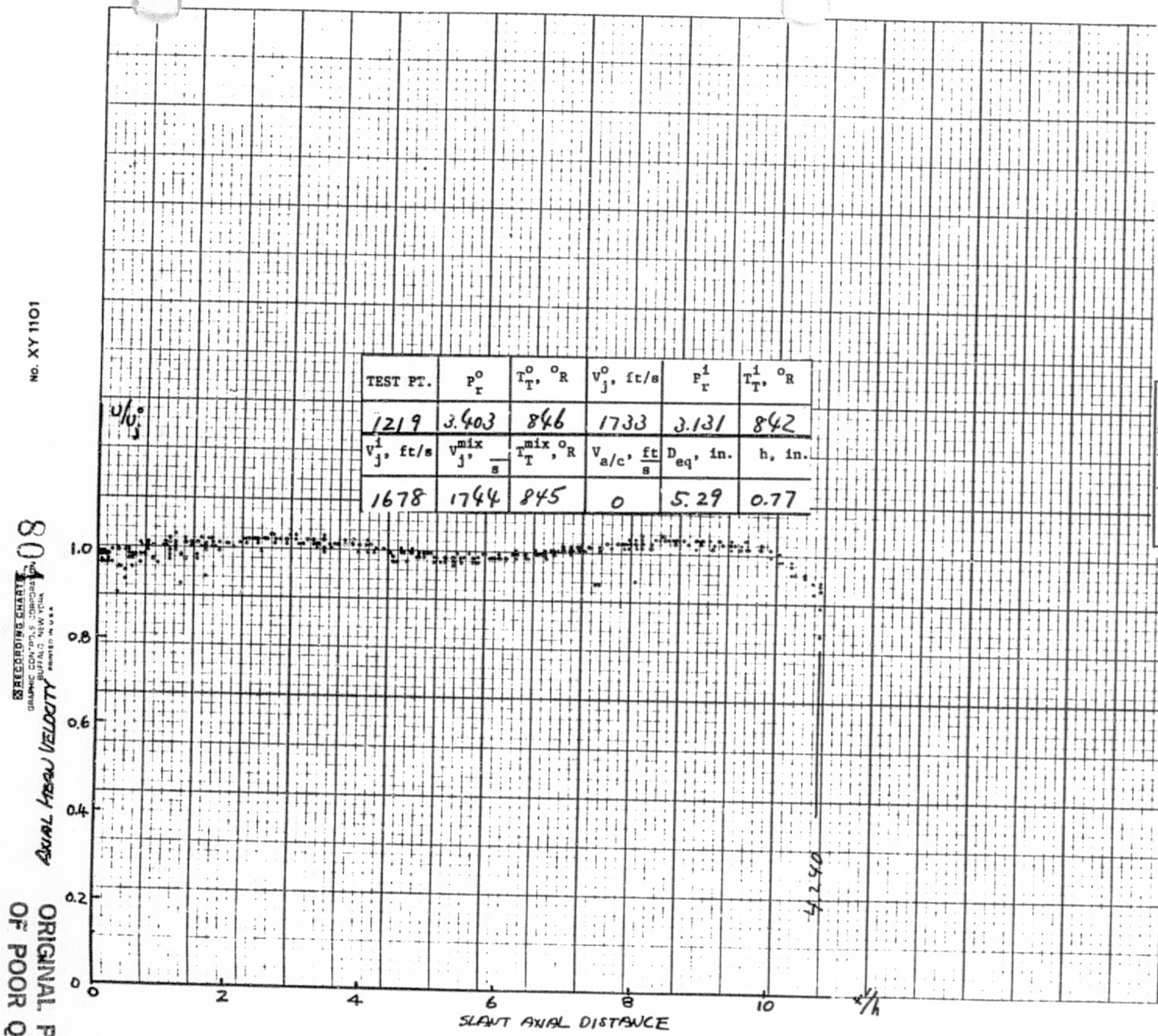
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1219	3.403	846	1733	3.131	842
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1678	1744	845	0	5.29	0.77



DATE: 9/24/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC -1220

PLOT IDENTIFICATION : G - 1023

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)-6.708 VOLTS; TRAVERSE -6.708 VOLTS } $\frac{R}{R_2}$ =

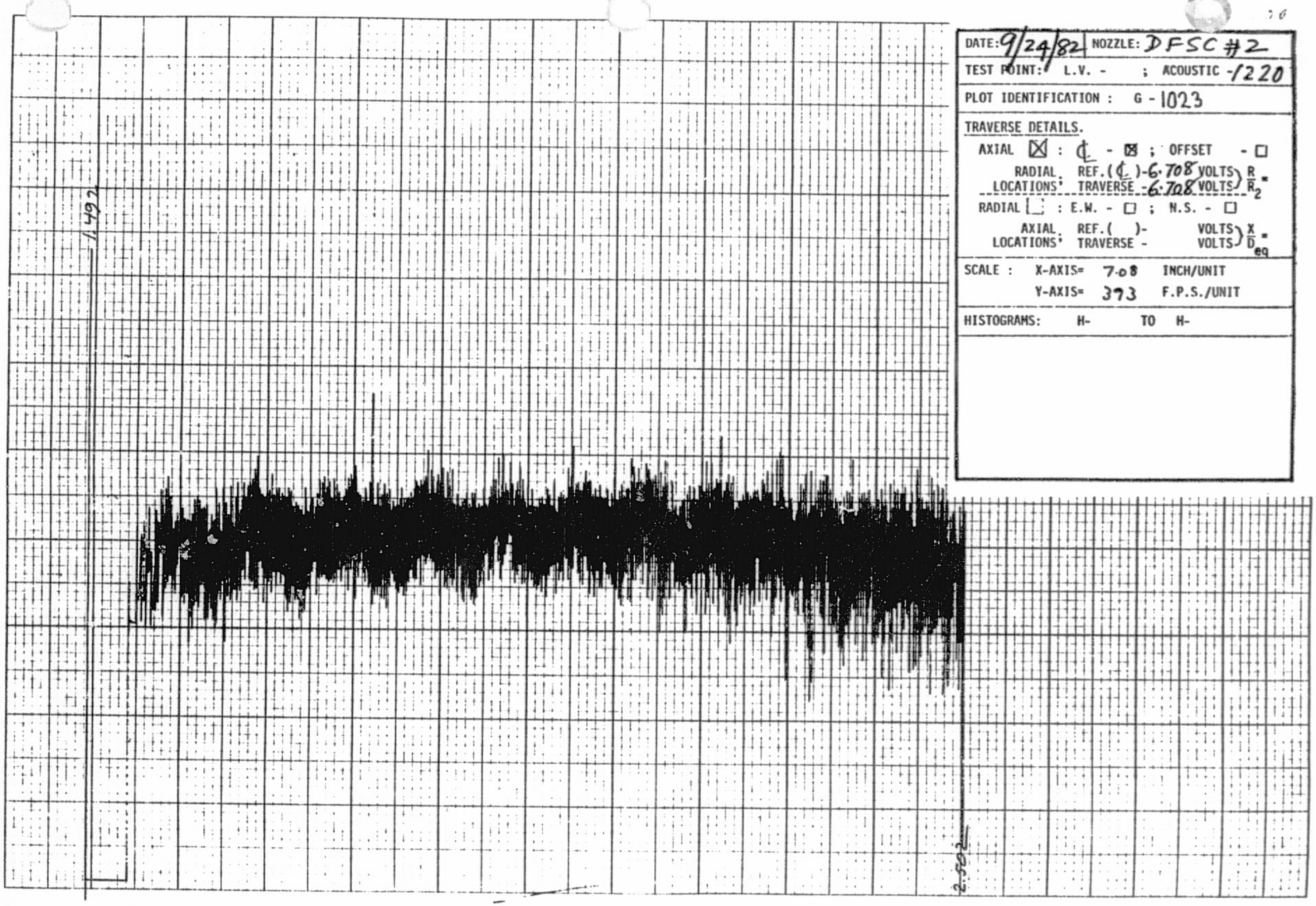
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS } $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 373 F.P.S./UNIT

HISTOGRAMS: H- TO H-



No. XY 1101

805

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

DATE: 9/24/82	NOZZLE: DFSC#2
TEST POINT: L.V. - ; ACOUSTIC -1220	
PLOT IDENTIFICATION : G - 1024	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)-6.708 VOLTS; TRAVERSE -6.708 VOLTS } R/R_2 =

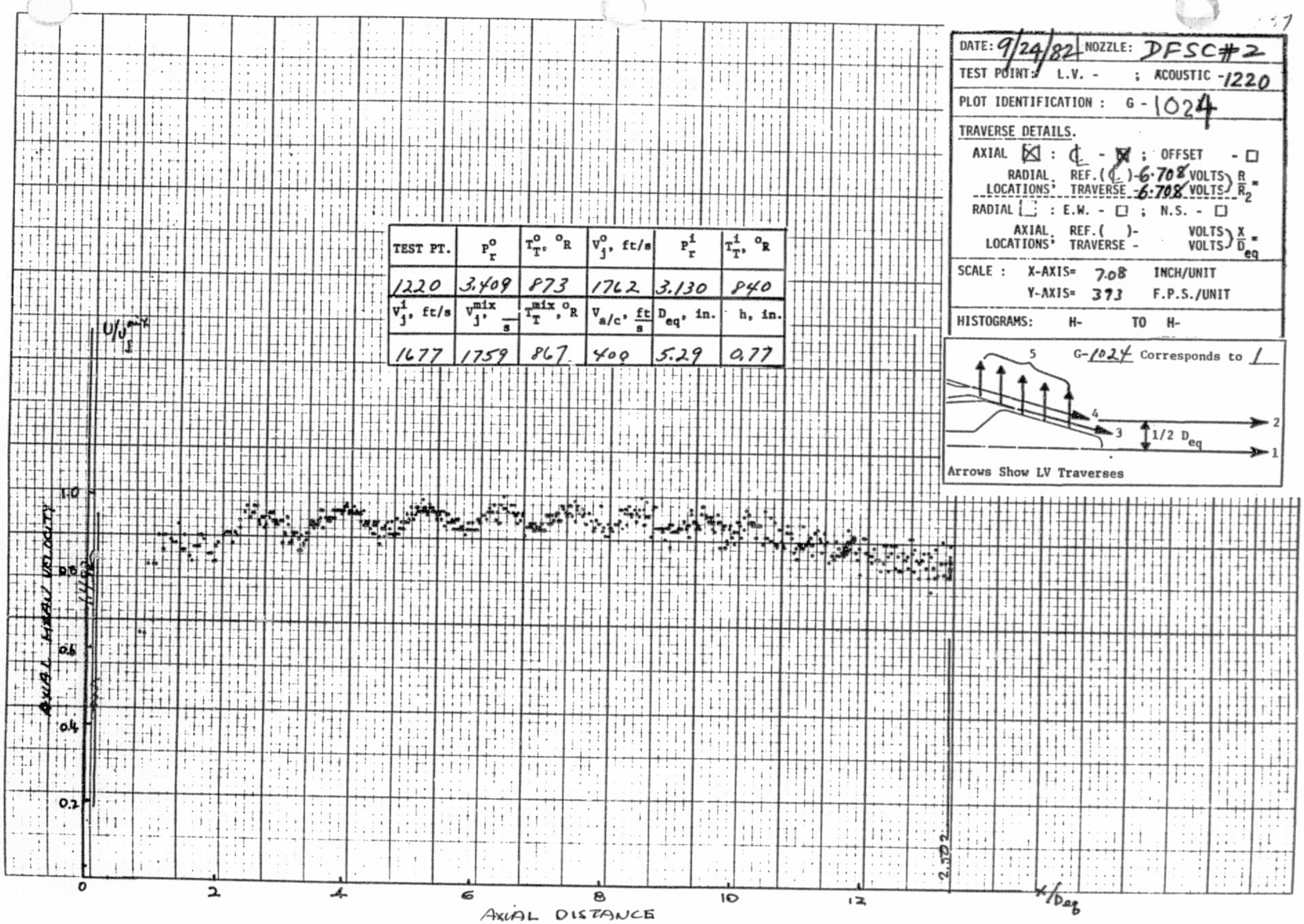
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS } X/D_{eq} =

SCALE : X-AXIS= 7.08 INCH/UNIT; Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1220	3.409	873	1762	3.130	840
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1677	1759	867	400	5.29	0.77



NO. XY 1101

908

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DATE: 9/23/82 NOZZLE: DFSC#2

TEST POINT: L.V. - ; ACOUSTIC -1220

PLOT IDENTIFICATION : G - 1025

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

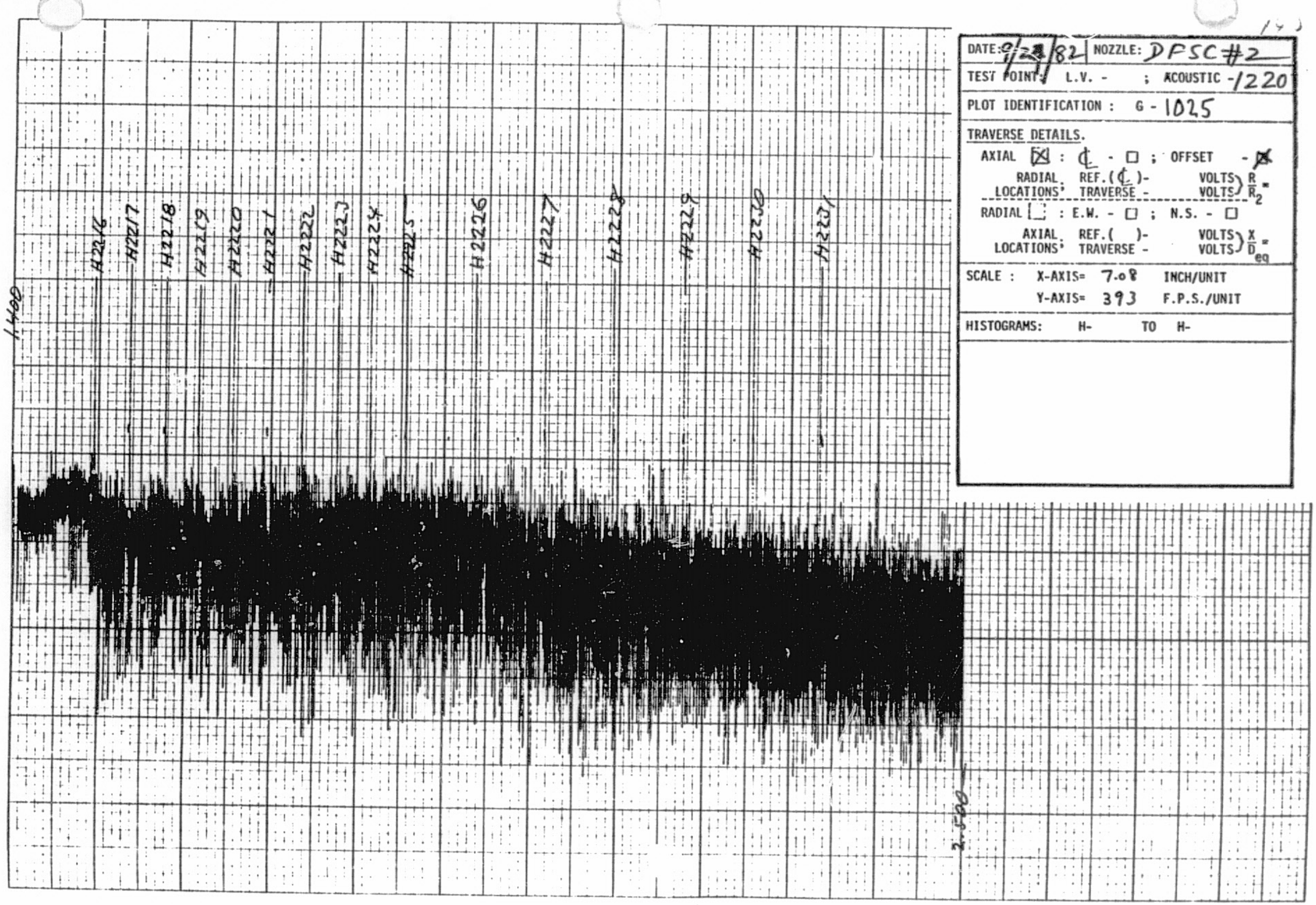
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



No. XY 1101

807

RECORDING CHARTS

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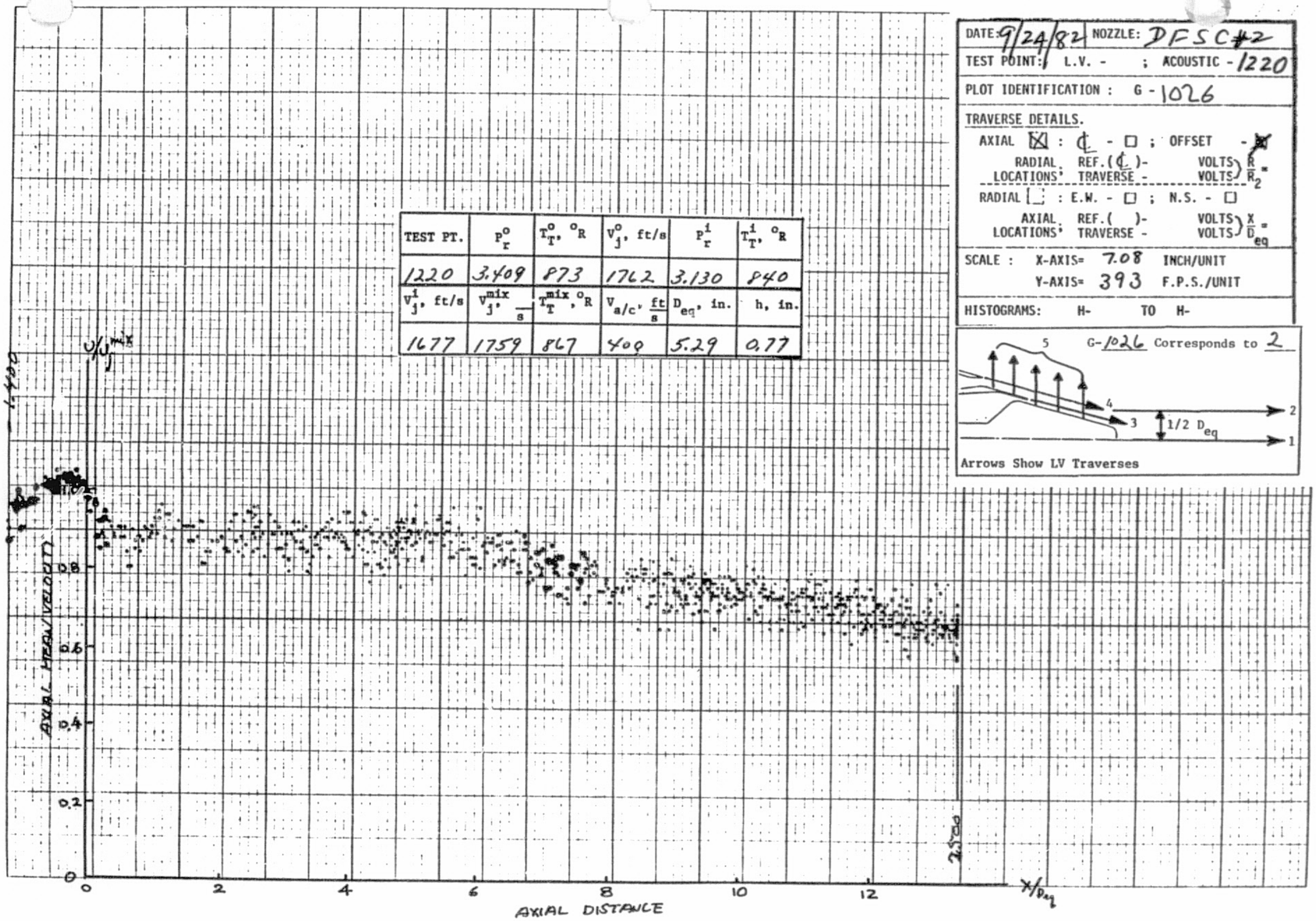

DATE: 9/24/82 NOZZLE: DFSC#2

TEST POINT: L.V. - ; ACOUSTIC - 1220

PLOT IDENTIFICATION : G - 1026

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1026 Corresponds to 2

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1220	3.409	873	1762	3.130	840
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1677	1759	867	409	5.29	0.77

NO. XY 11

808

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

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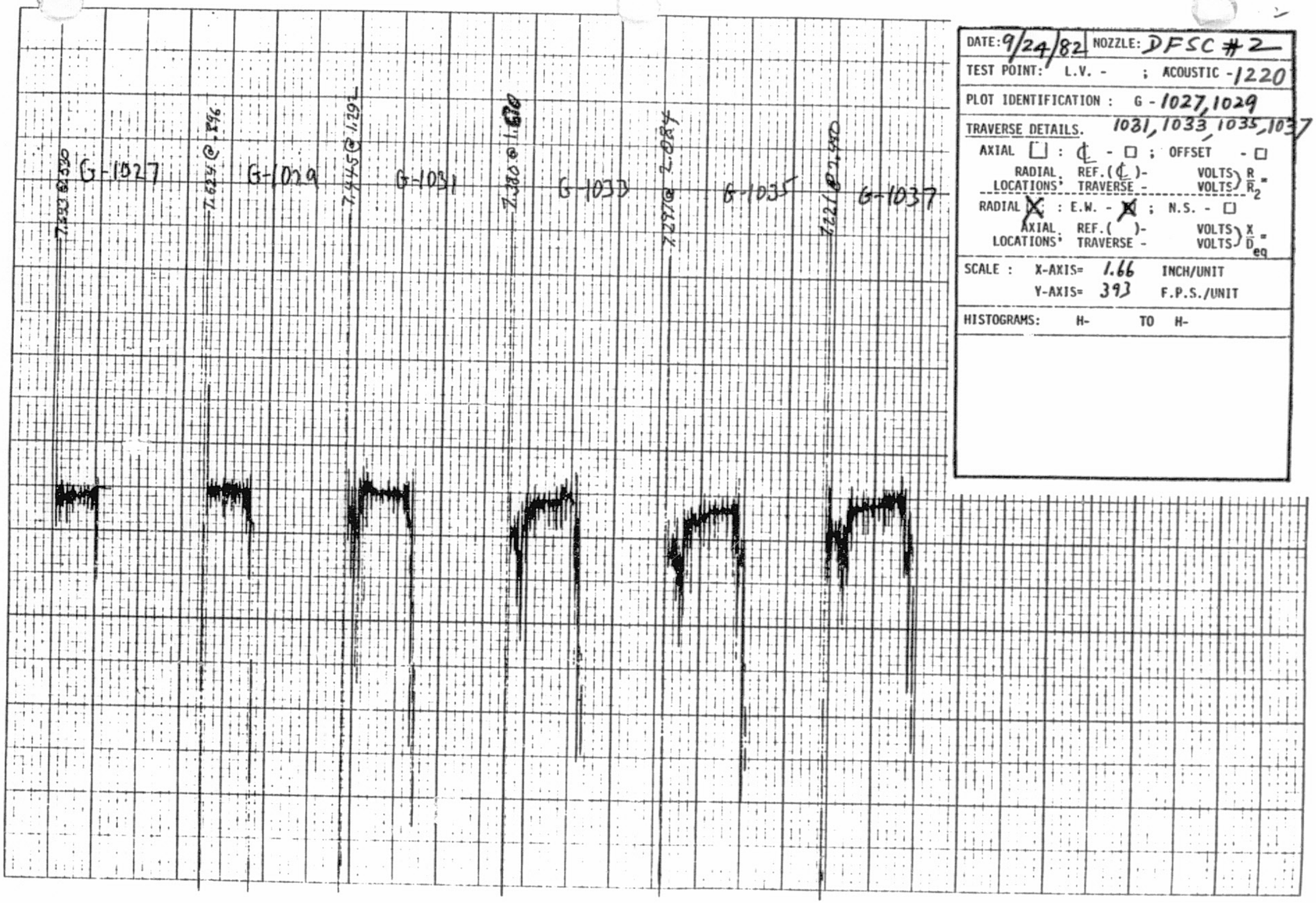

DATE: 9/24/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 1220

PLOT IDENTIFICATION : G - 1027, 1029, 1031, 1033, 1035, 1037

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

809

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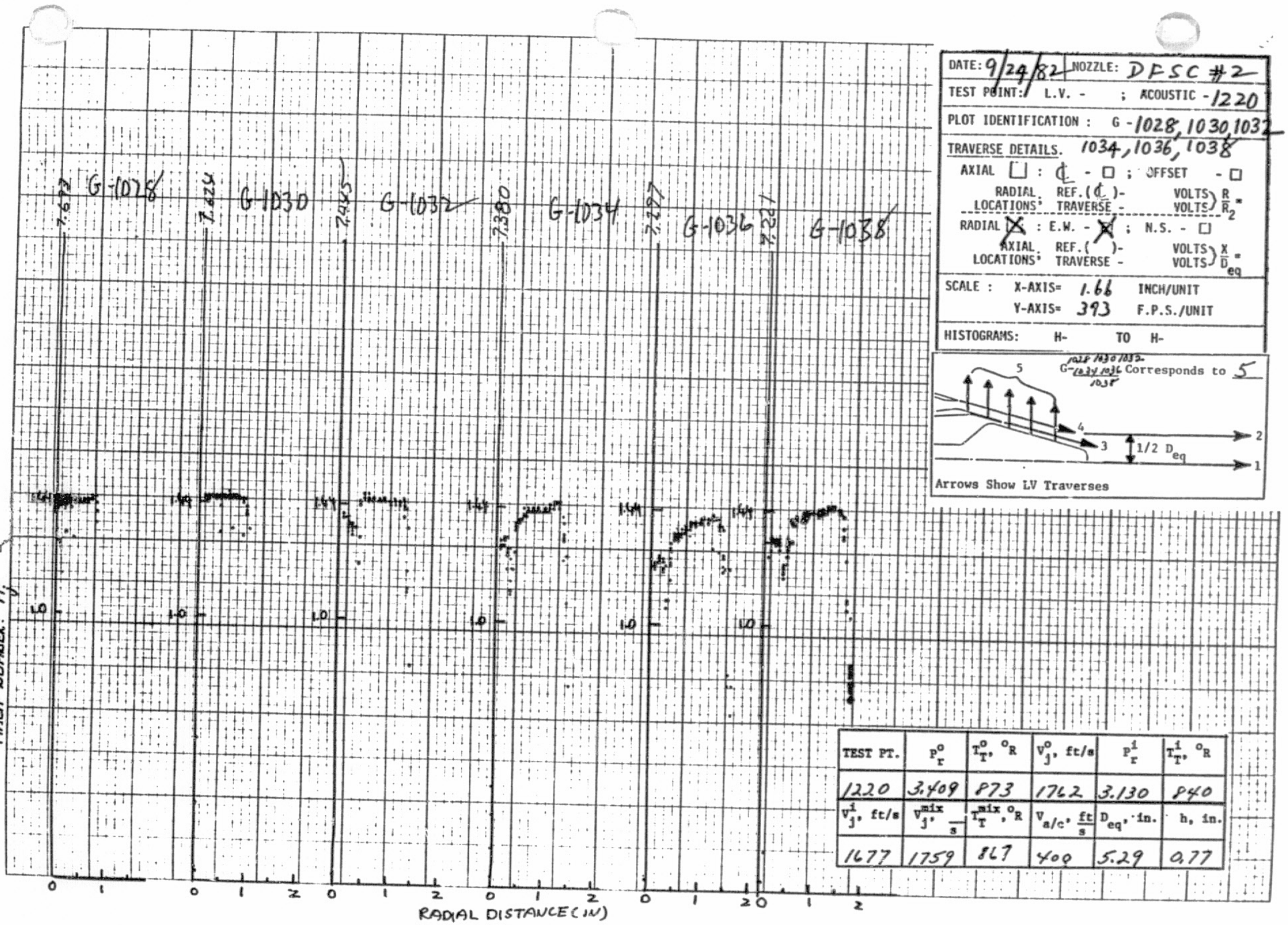

DATE: 9/24/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 1220

PLOT IDENTIFICATION : G - 1028, 1030, 1032, 1034, 1036, 1038

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1220	3.409	873	1762	3.130	840
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1677	1759	867	400	5.29	0.77

NO. XY 1101

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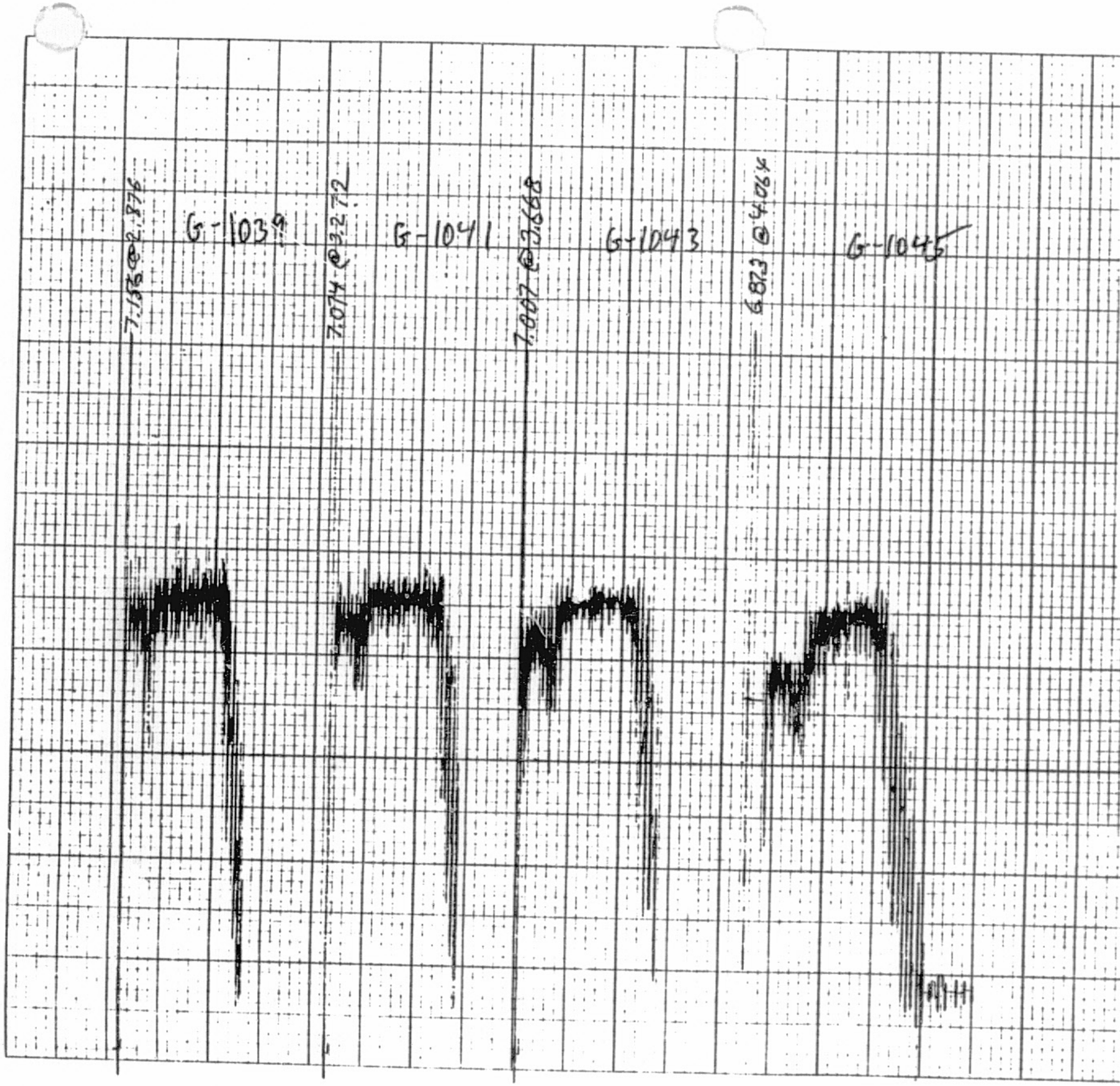

DATE: 9/24/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 1220

PLOT IDENTIFICATION : G -1039, 1041, 1043, 1045

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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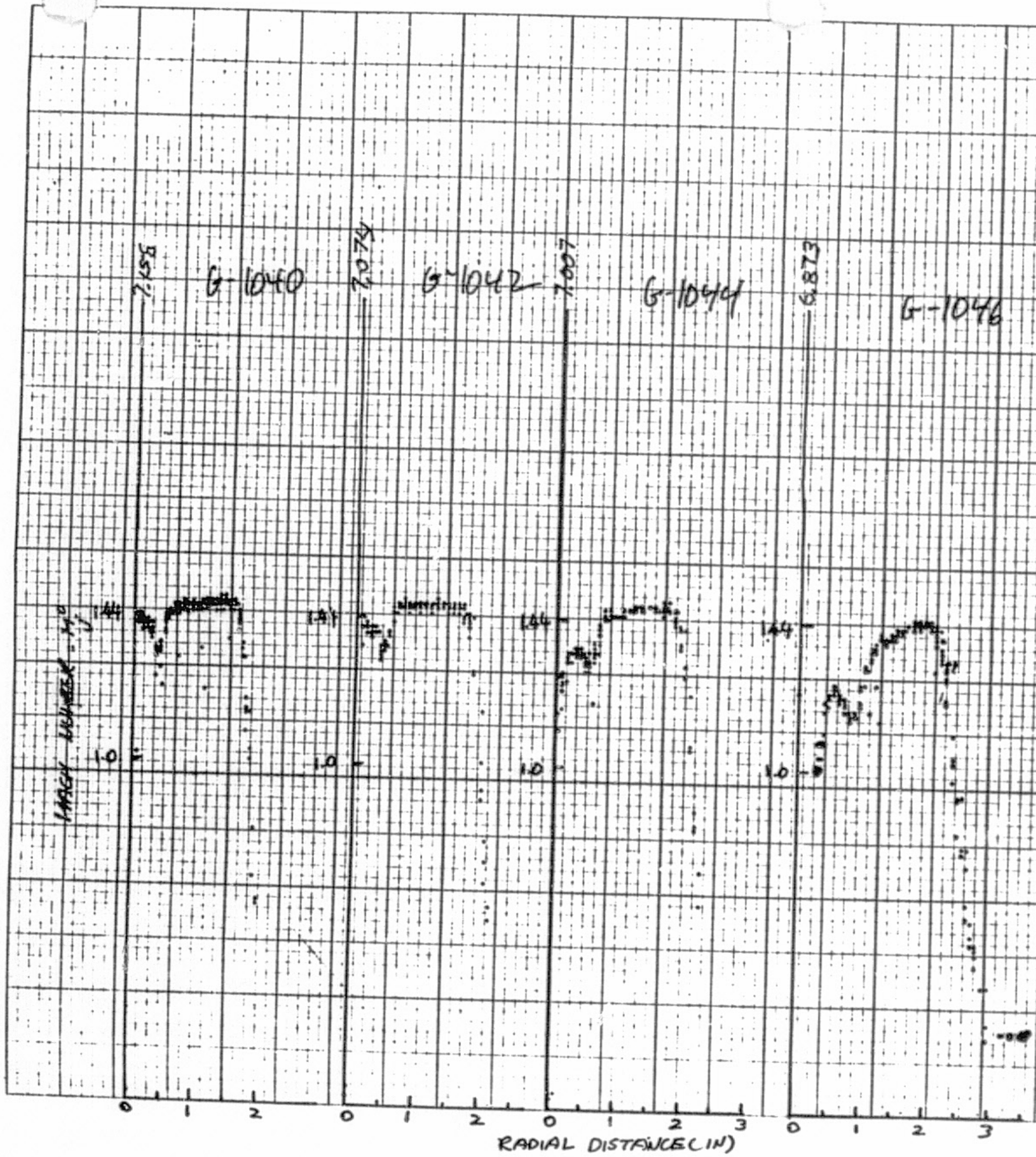


DATE: 9/24/82 NOZZLE: DFSC#2

TEST POINT: L.V. - ; ACOUSTIC - 1220

PLOT IDENTIFICATION : G - 1040, 1042, 1044, 1046

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

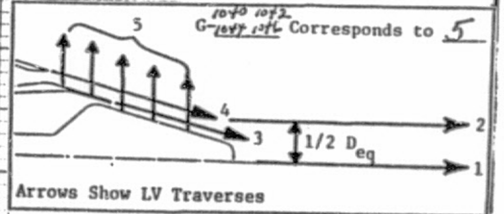
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1220	3.409	873	1762	3.130	840
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1677	1759	867	400	5.29	0.77

NO. XY 1101

812

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DATE: 9/27/82	NOZZLE: DFSC #2
TEST POINT: L.V. - ; ACOUSTIC - 1220	
PLOT IDENTIFICATION : G - 1071	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

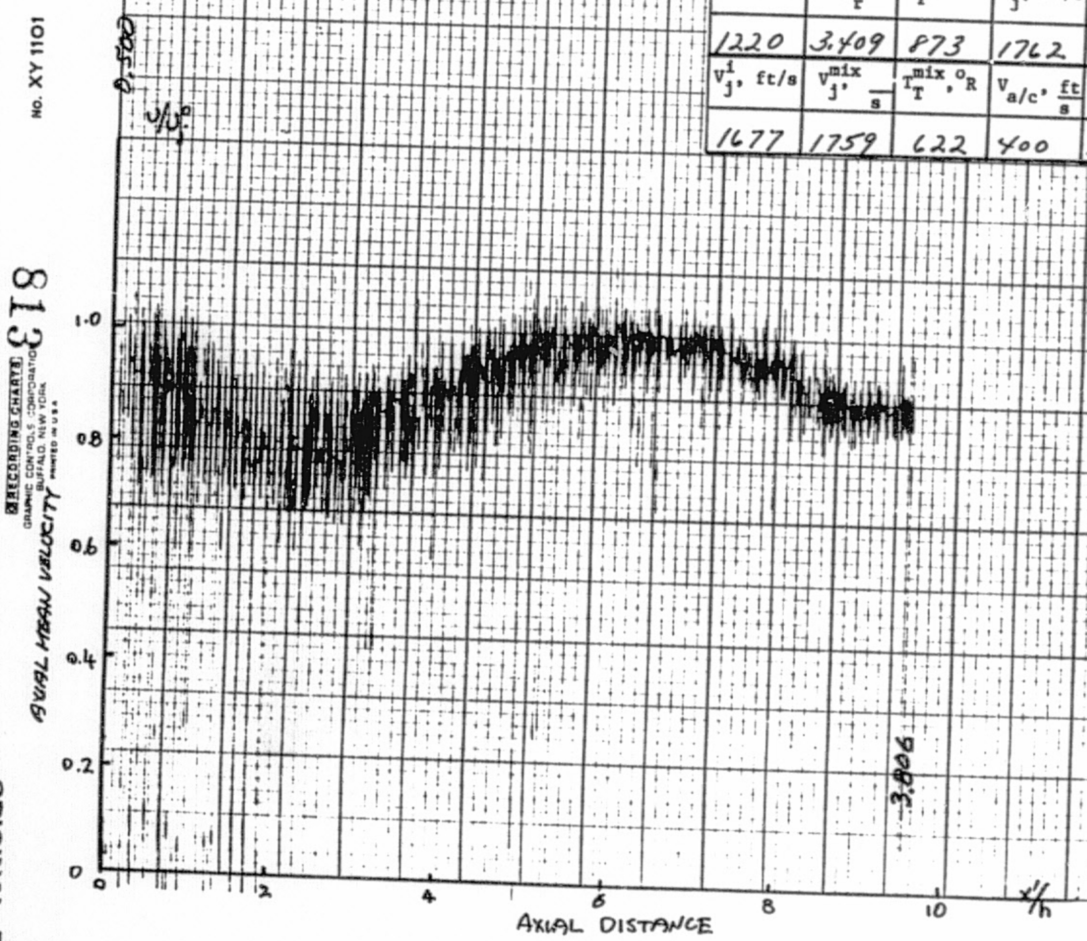
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1220	3.409	873	1762	3.130	840
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1677	1759	622	400	5.29	0.77



NO. XY 1101

813

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C-4

DATE: 9/27/82	NOZZLE: DFSC #2
TEST POINT: L.V. - ; ACOUSTIC - 1220	
PLOT IDENTIFICATION : G - 1072	

TRAVERSE DETAILS.

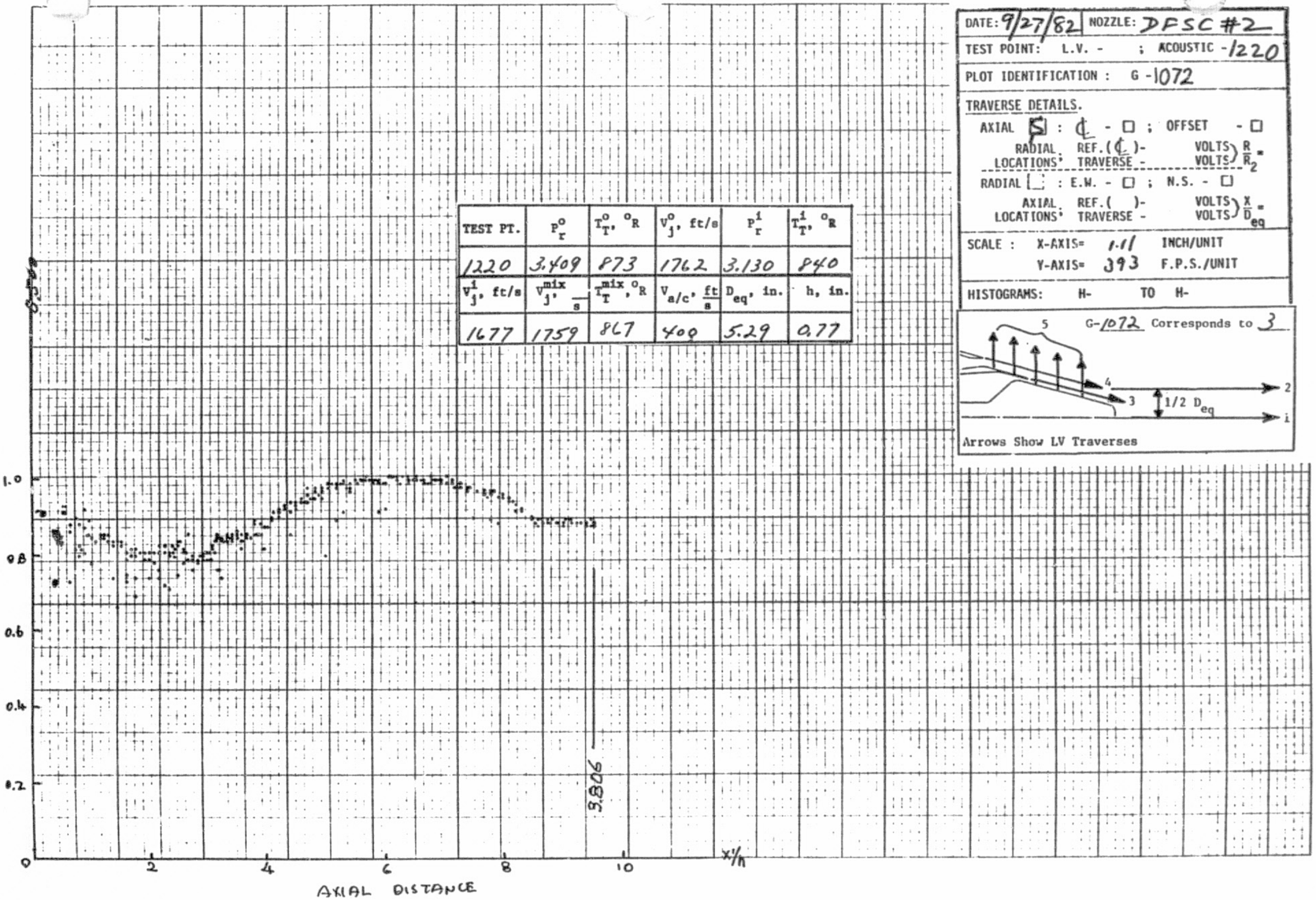
AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1220	3.409	873	1762	3.130	840
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1677	1759	867	400	5.29	0.77



814

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815

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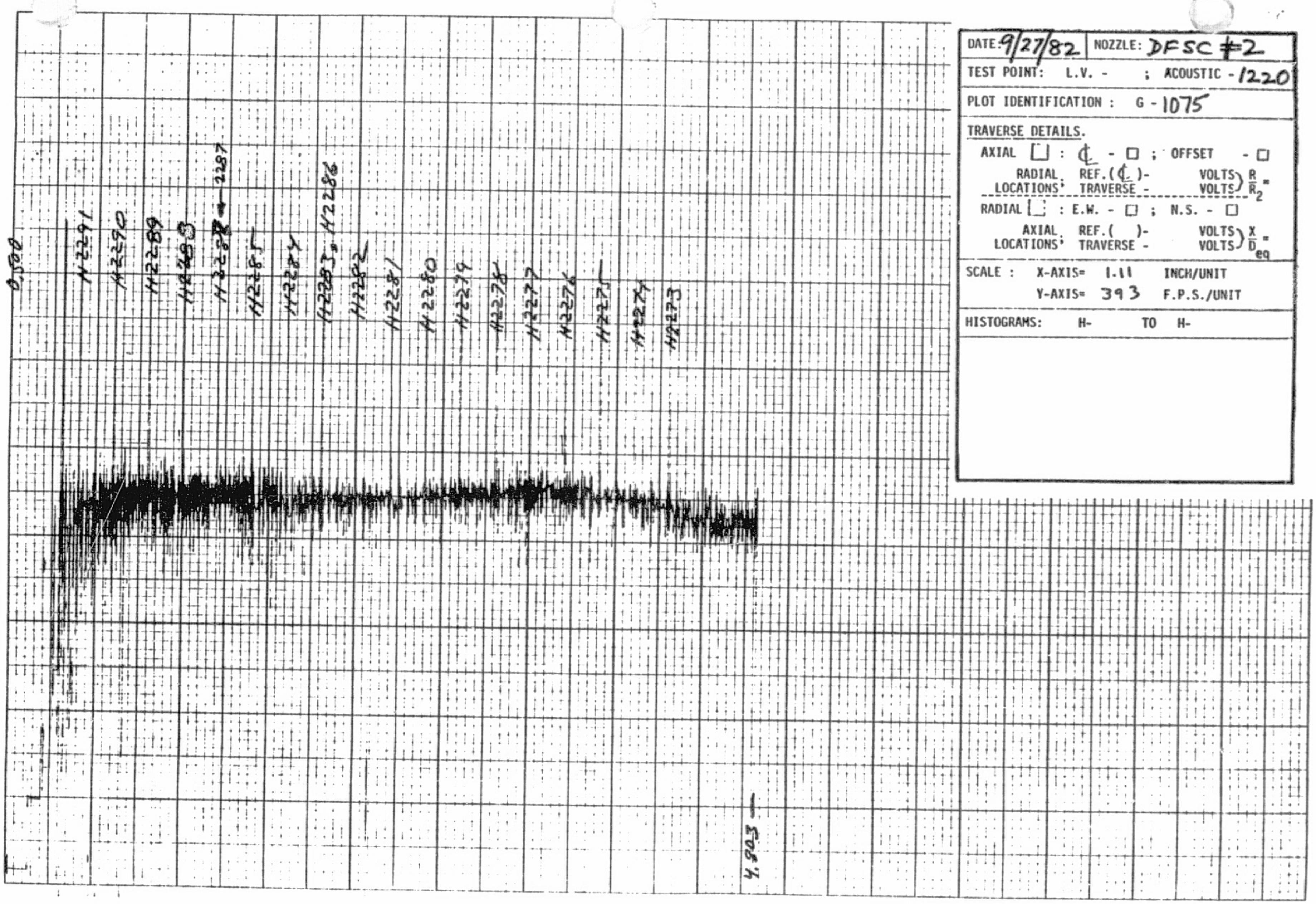

DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 1220

PLOT IDENTIFICATION : G - 1075

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 1220

PLOT IDENTIFICATION : G - 1076

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS) R/R₂ =

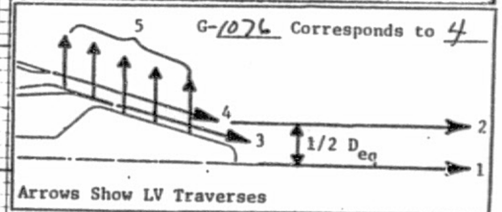
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS) X/D_eq =

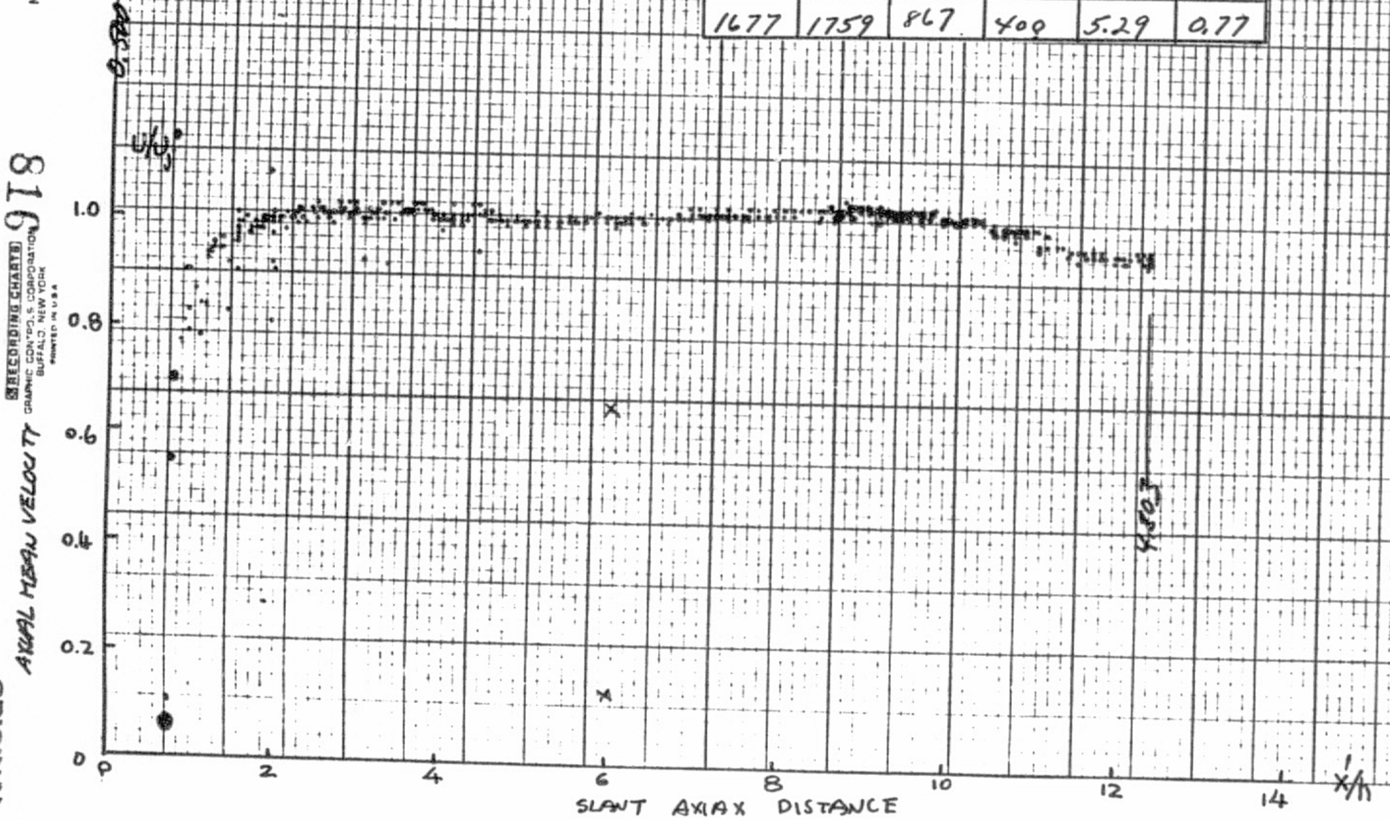
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1220	3.409	873	1762	3.130	840
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1677	1759	867	409	5.29	0.77



816

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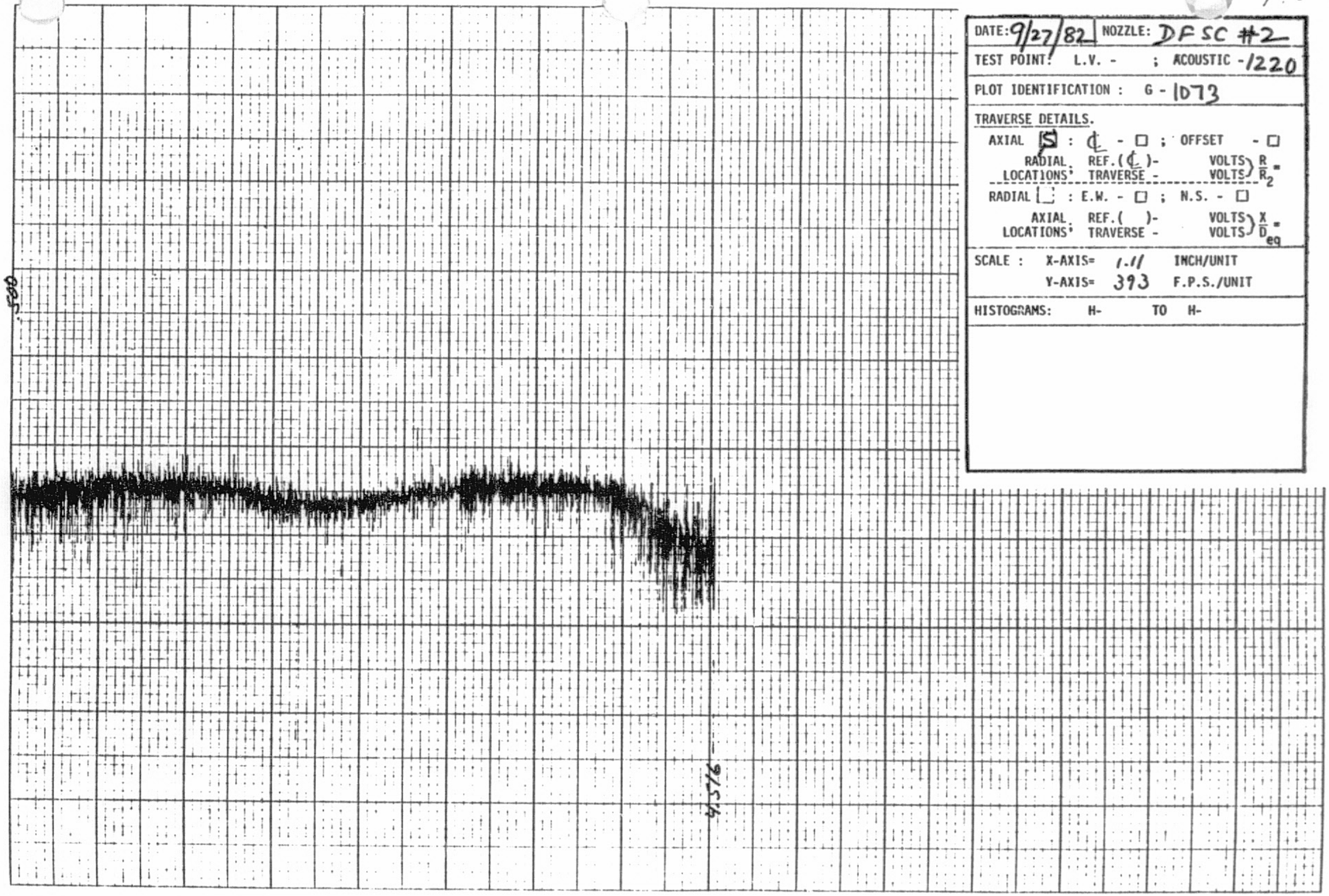

DATE: 9/27/82	NOZZLE: DFSC #2	
TEST POINT: L.V. -	; ACOUSTIC - 1220	
PLOT IDENTIFICATION : G - 1073		

TRAVERSE DETAILS.

AXIAL [S] : ℄ - □ ; OFFSET - □
RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =
RADIAL [ ] : E.W. - □ ; N.S. - □
AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

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GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK

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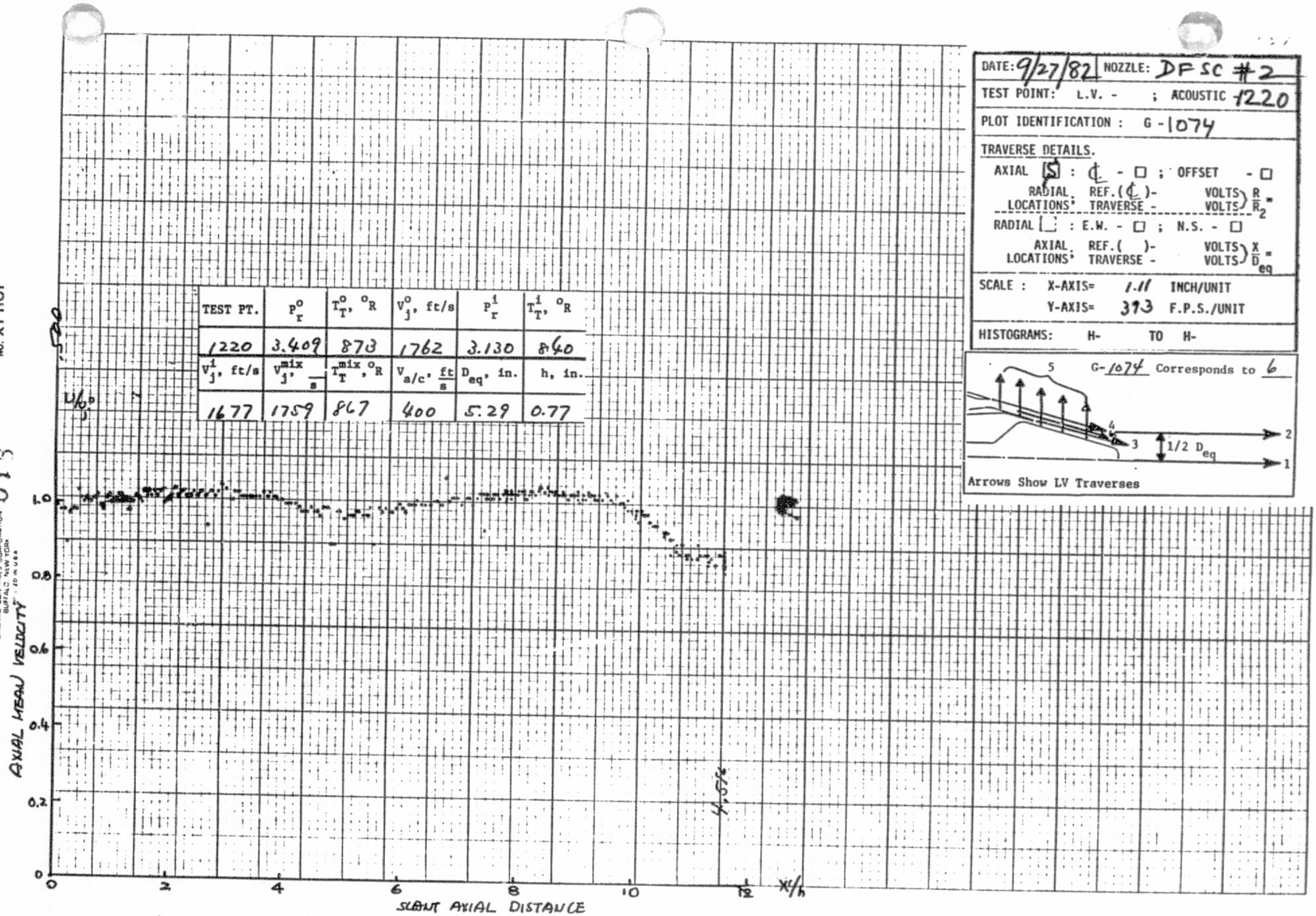
818



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1220	3.409	873	1762	3.130	840
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1677	1759	867	400	5.29	0.77

DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC 1220

PLOT IDENTIFICATION : G - 1074

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF. (℄) - TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

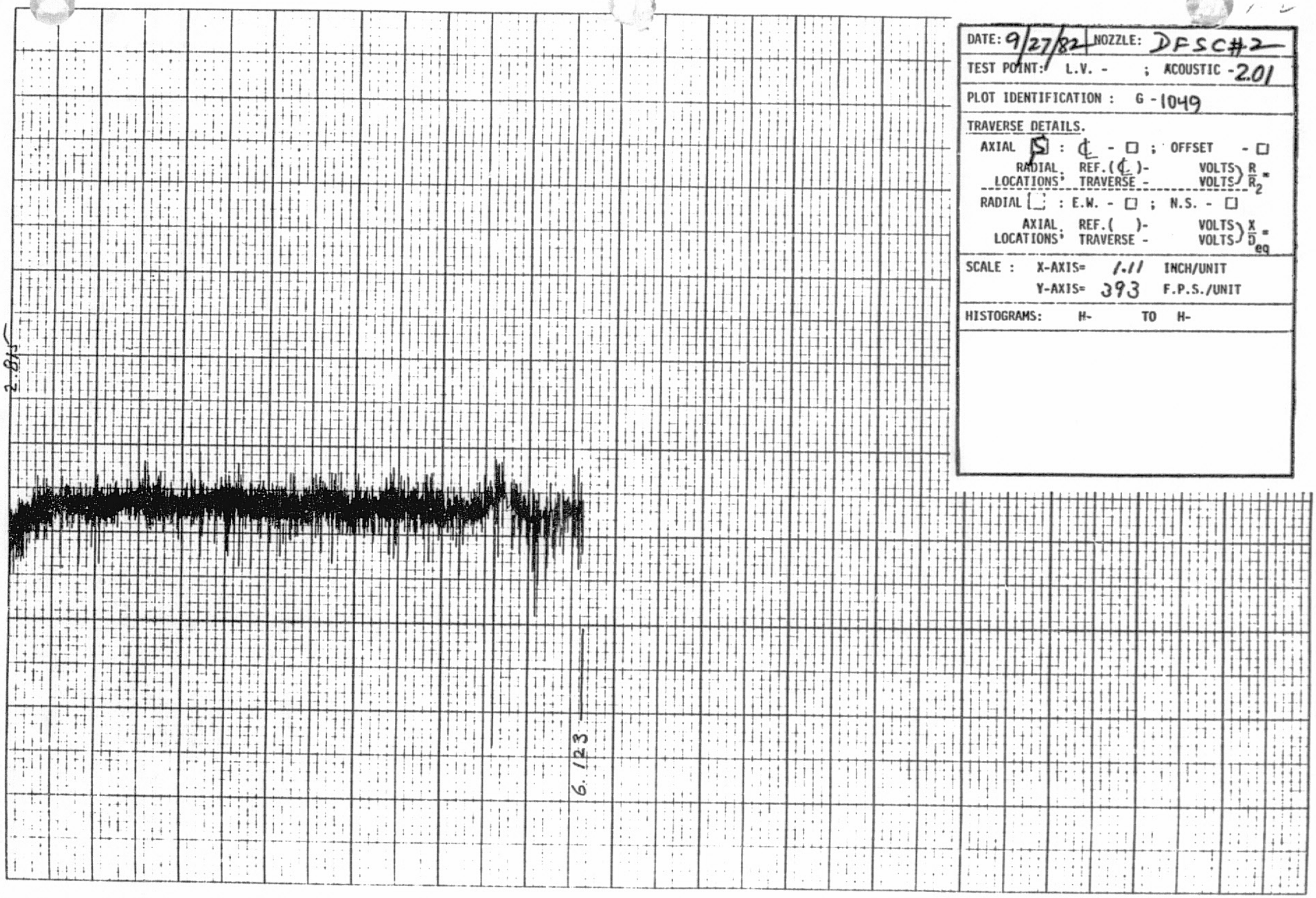
AXIAL LOCATIONS; REF. ( ) - TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1074 Corresponds to 6



DATE: 9/27/82 NOZZLE: DFSC#2

TEST POINT: L.V. - ; ACOUSTIC -2.01

PLOT IDENTIFICATION : G - 1049

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS; REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

819

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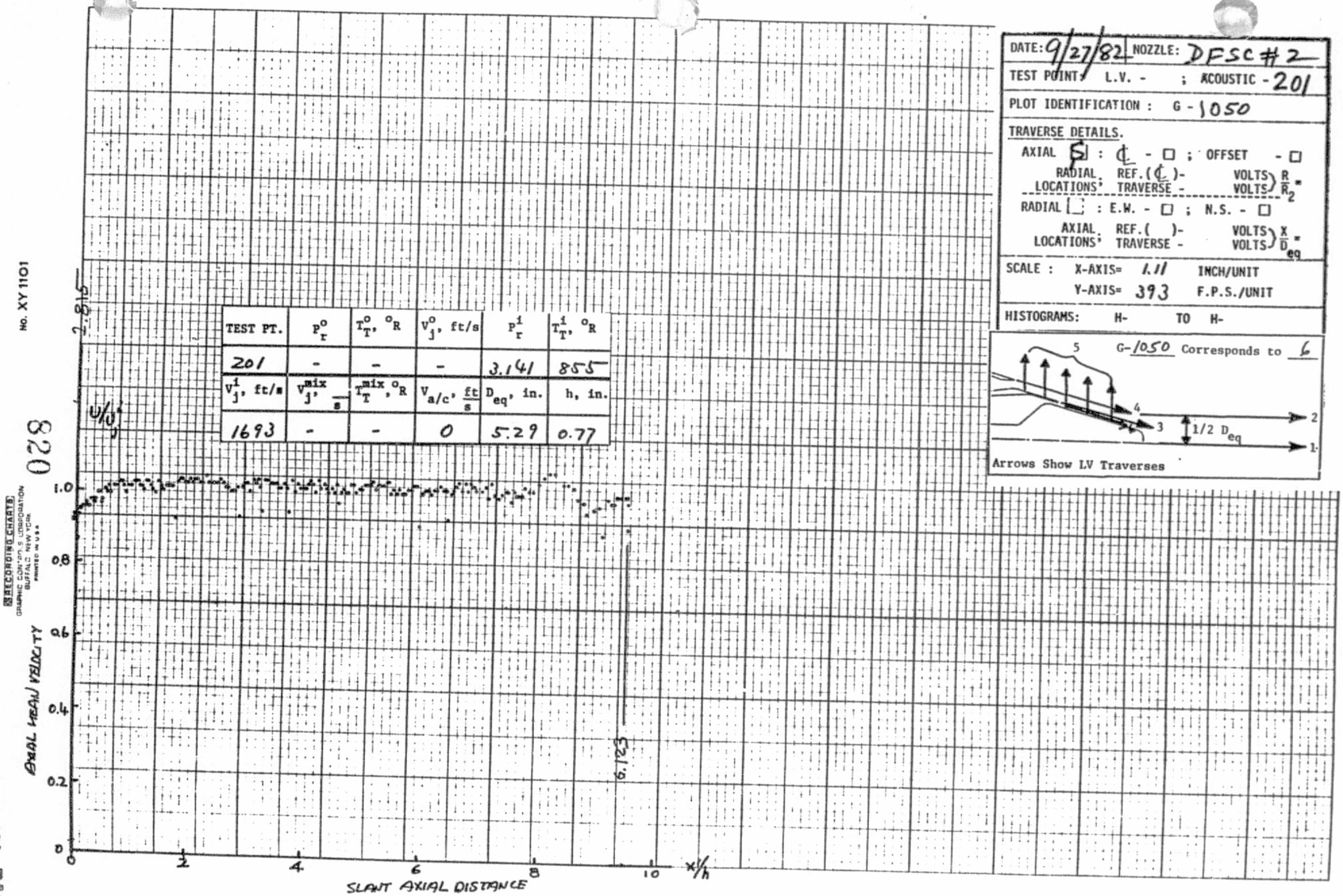

DATE: 9/27/82 NOZZLE: DFSC #2

TEST POINT: L.V. - ; ACOUSTIC - 201

PLOT IDENTIFICATION : G - 1050

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS; REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
201	-	-	-	3.141	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1693	-	-	0	5.29	0.77

NO. XY 1101

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5.2.3.3 Mean Velocity Traces of DFSC-3

DATE: 9/30/82 | NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC - 319

PLOT IDENTIFICATION : G - 1091

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

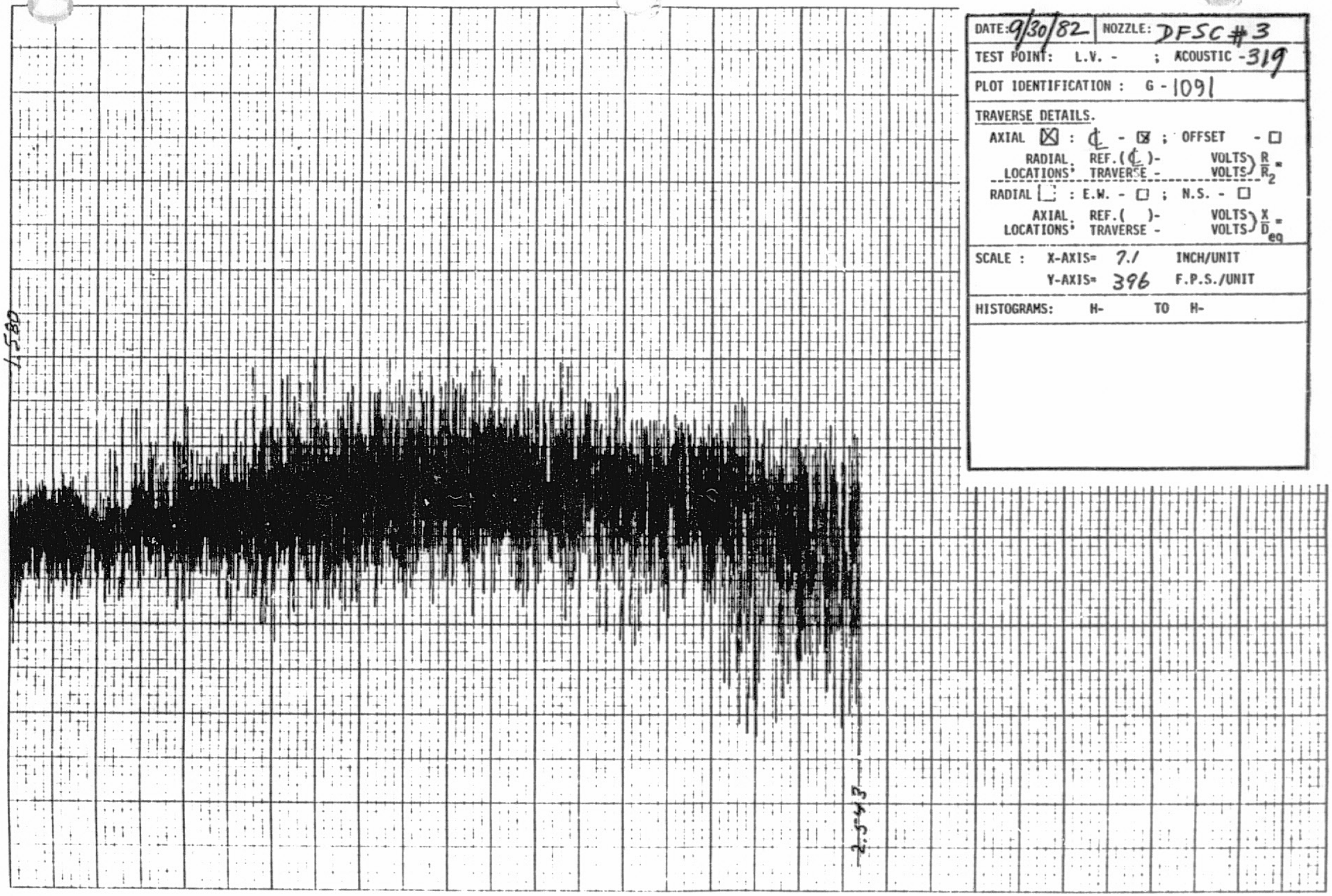
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

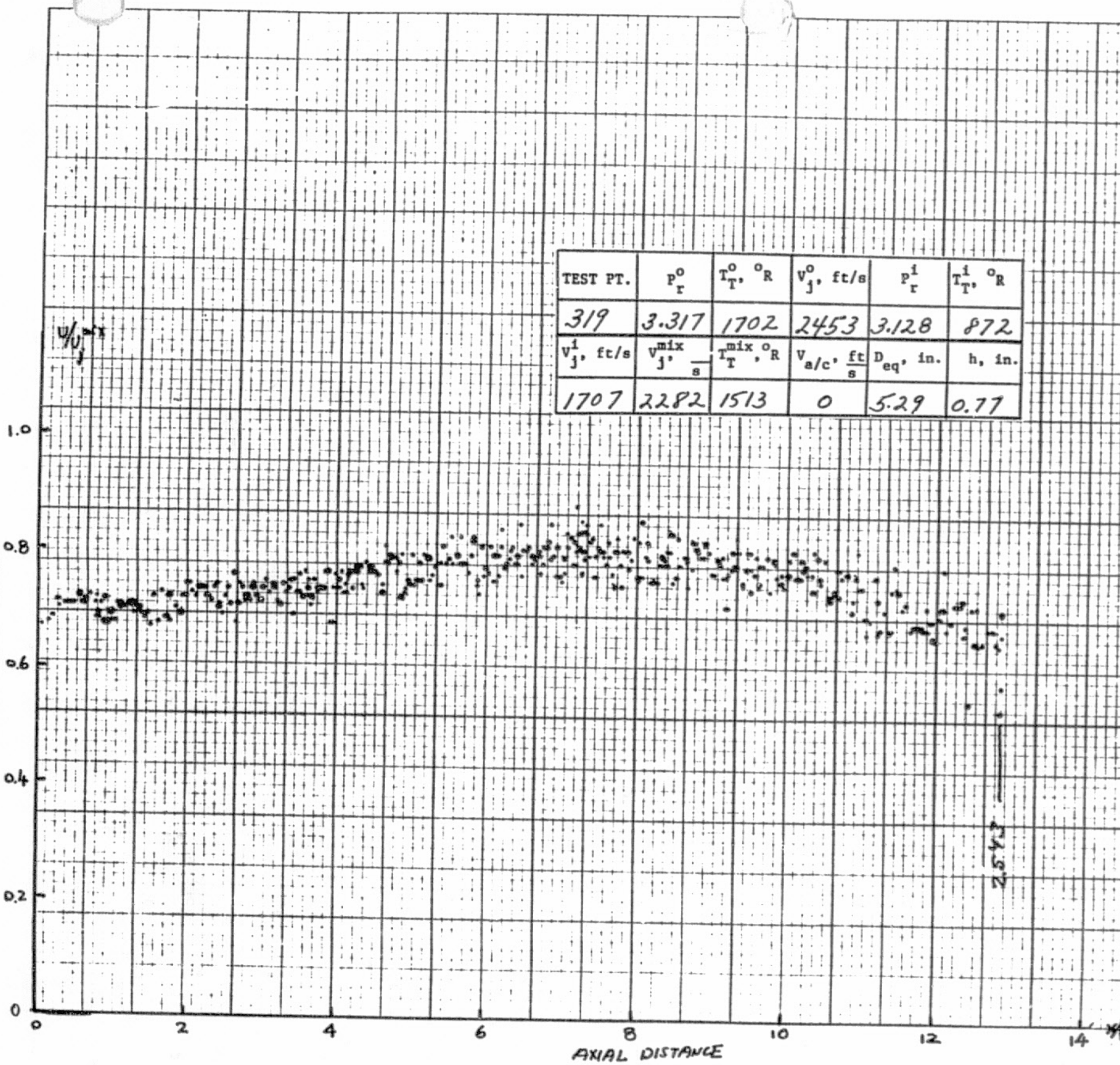
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-





DATE: 9/30/82	NOZZLE: DFSC #3
TEST POINT: L.V. - ; ACOUSTIC - 319	
PLOT IDENTIFICATION : G - 1092	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

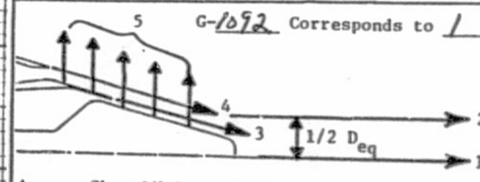
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT
Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-



G-1092 Corresponds to 1

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
319	3.317	1702	2453	3.128	872
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1707	2282	1513	0	5.29	0.77

NO. XY 1101

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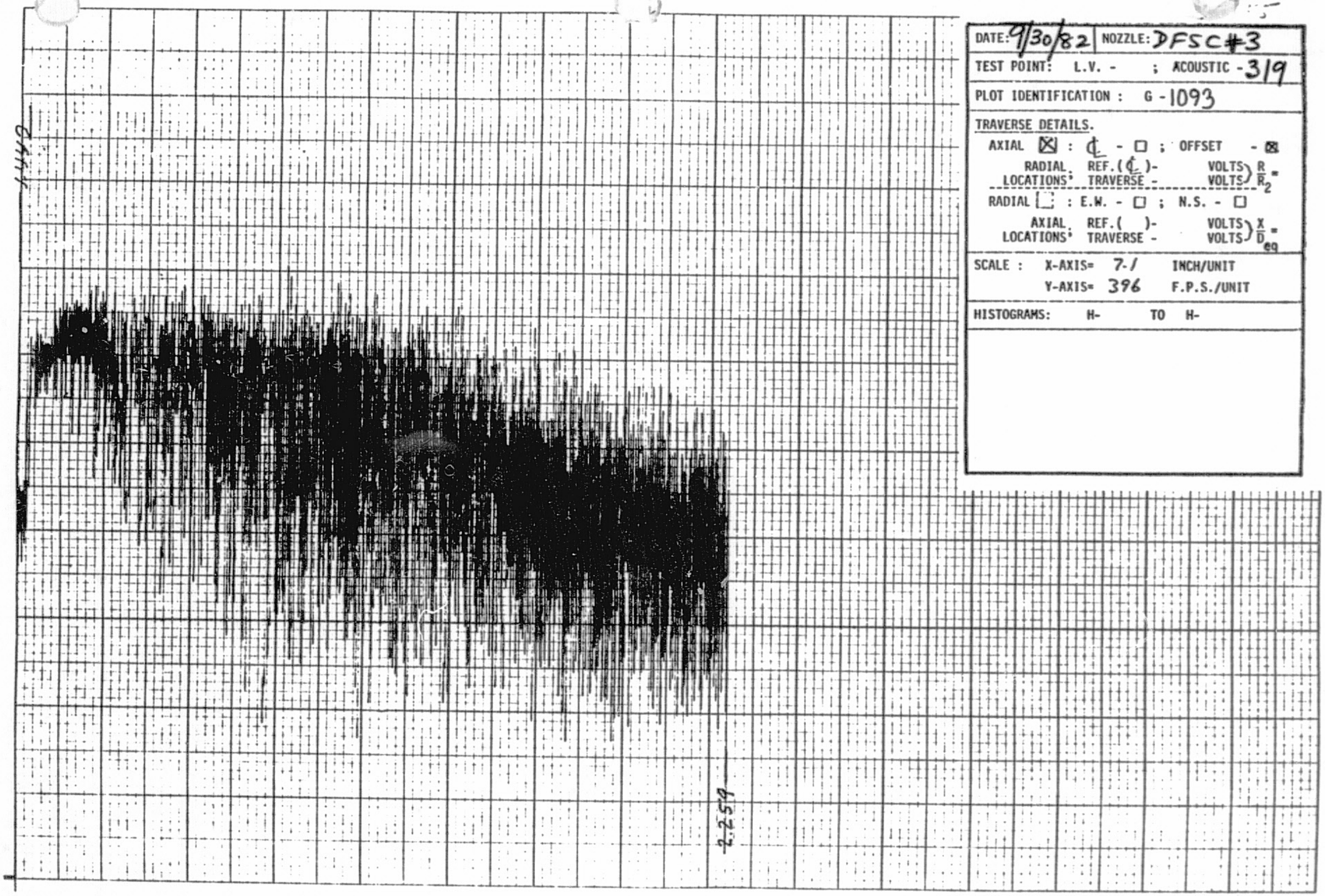

DATE: 9/30/82	NOZZLE: DFSC#3
TEST POINT: L.V. - ; ACOUSTIC - 319	
PLOT IDENTIFICATION : G - 1093	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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DATE: 9/30/82 NOZZLE: DFSC#3

TEST POINT: L.V. - ; ACOUSTIC - 319

PLOT IDENTIFICATION : G - 1094

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

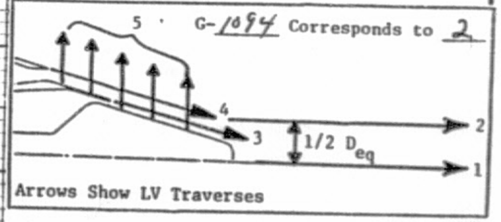
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

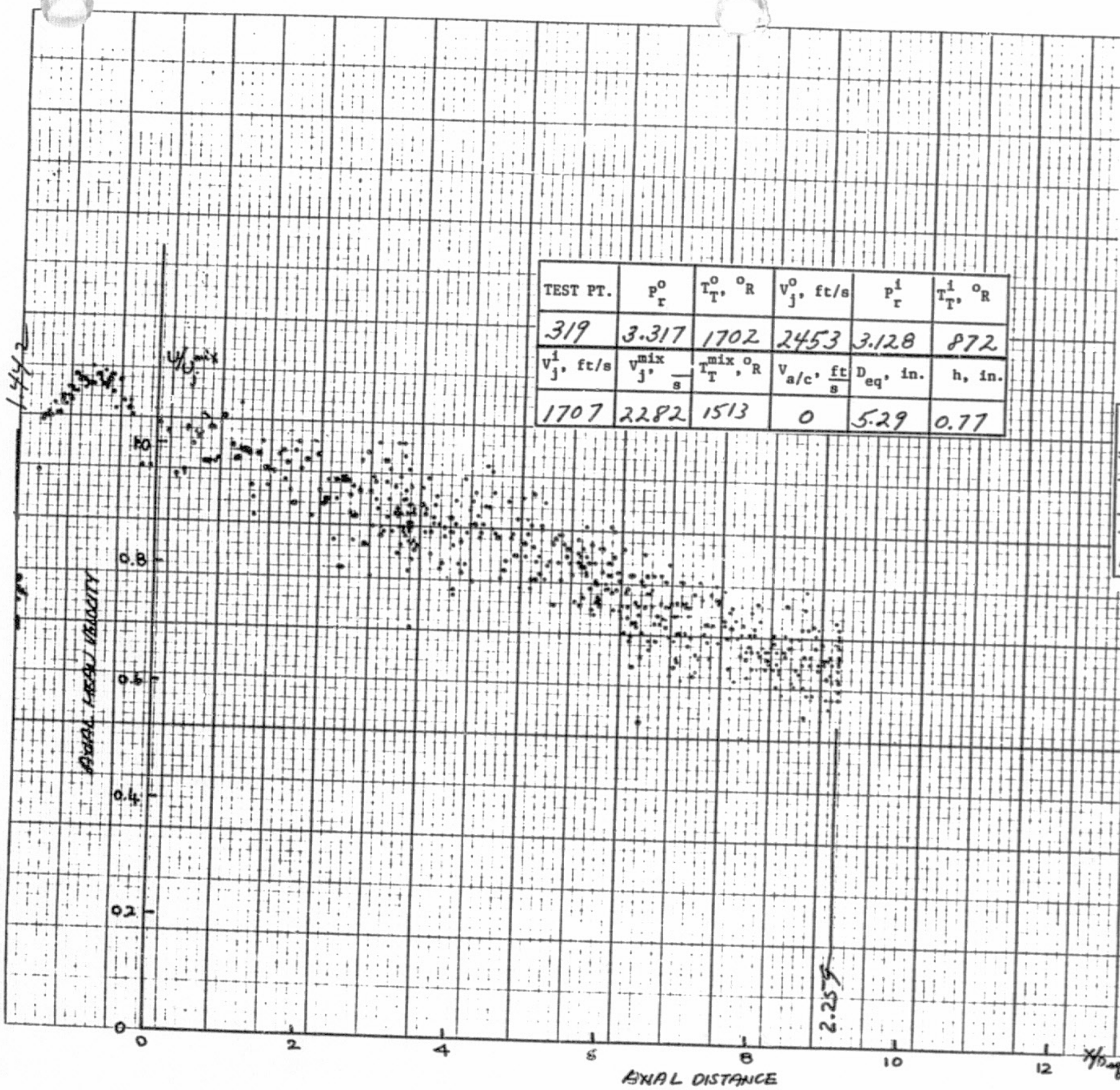
SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, ^oR	V_j^o, ft/s	P_r^i	T_T^i, ^oR
319	3.317	1702	2453	3.128	872
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, ^oR	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1707	2282	1513	0	5.29	0.77





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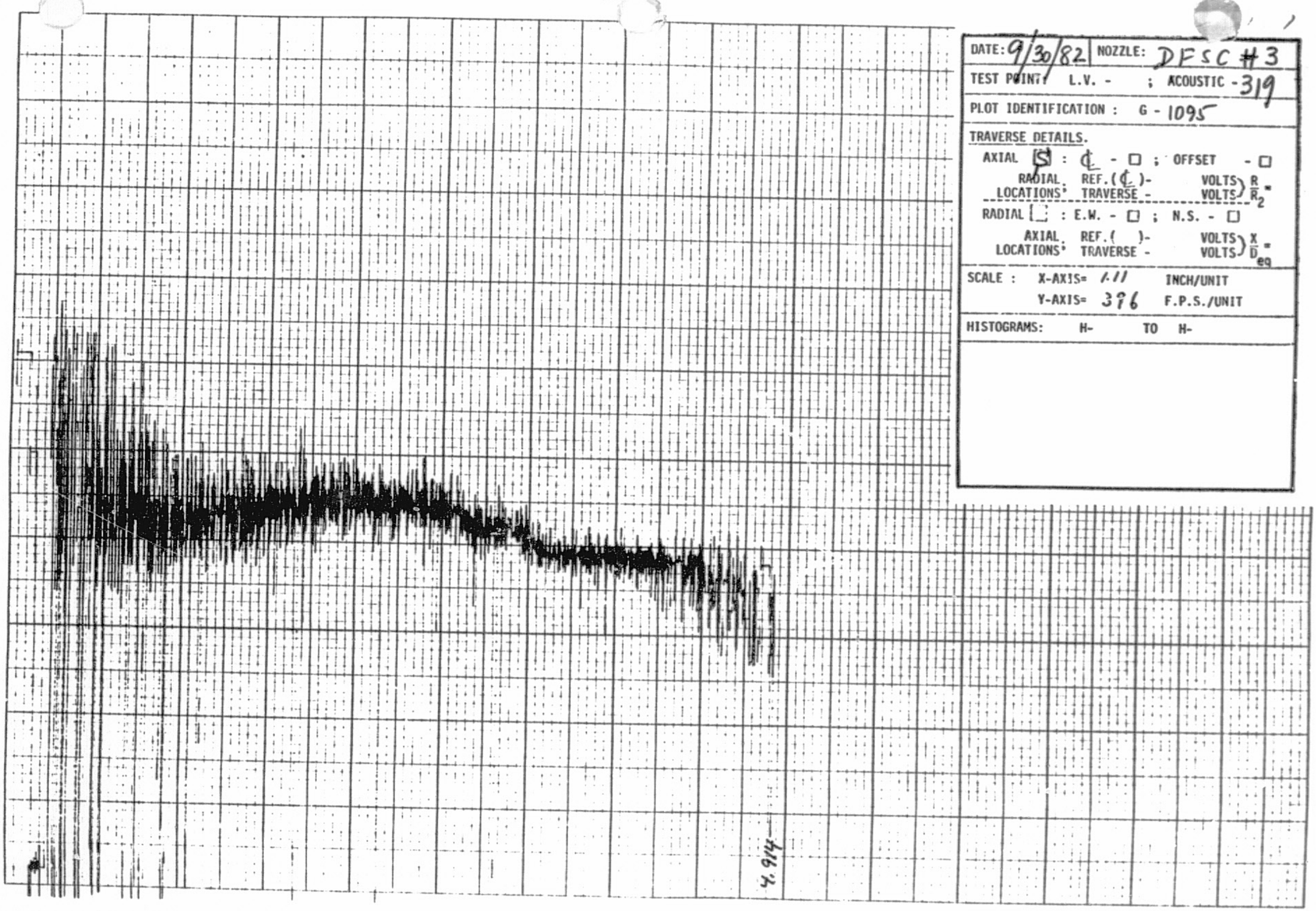

NO. XY 1101

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827

DATE: 9/30/82	NOZZLE: DFSC#3
TEST POINT: L.V. - ; ACOUSTIC - 319	
PLOT IDENTIFICATION : G - 1096	

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

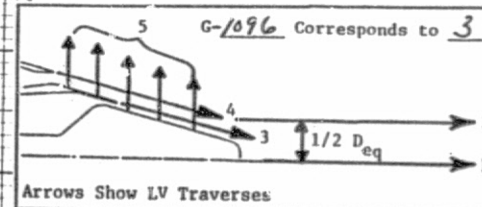
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

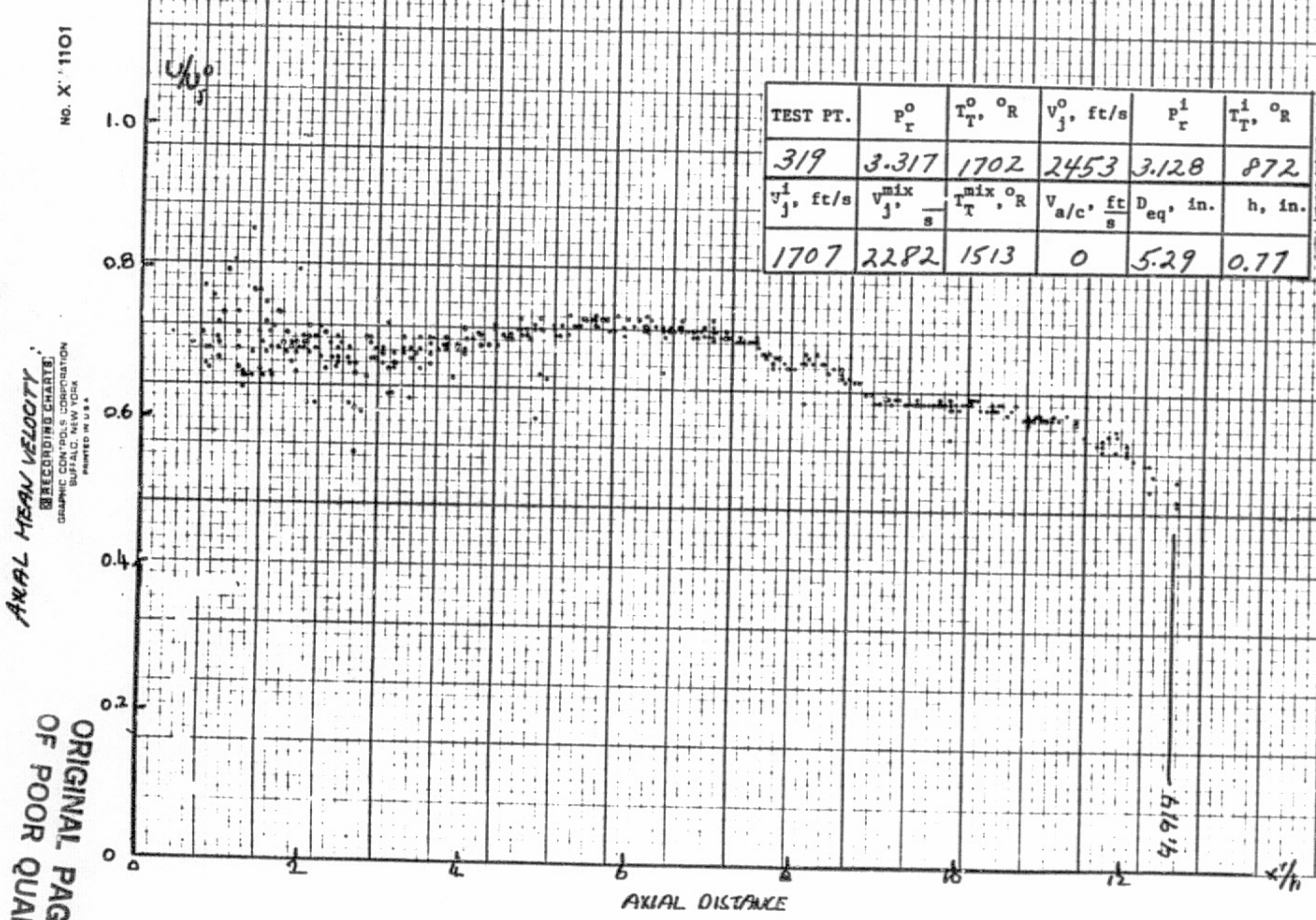
SCALE : X-AXIS= 1.11 INCH/UNIT

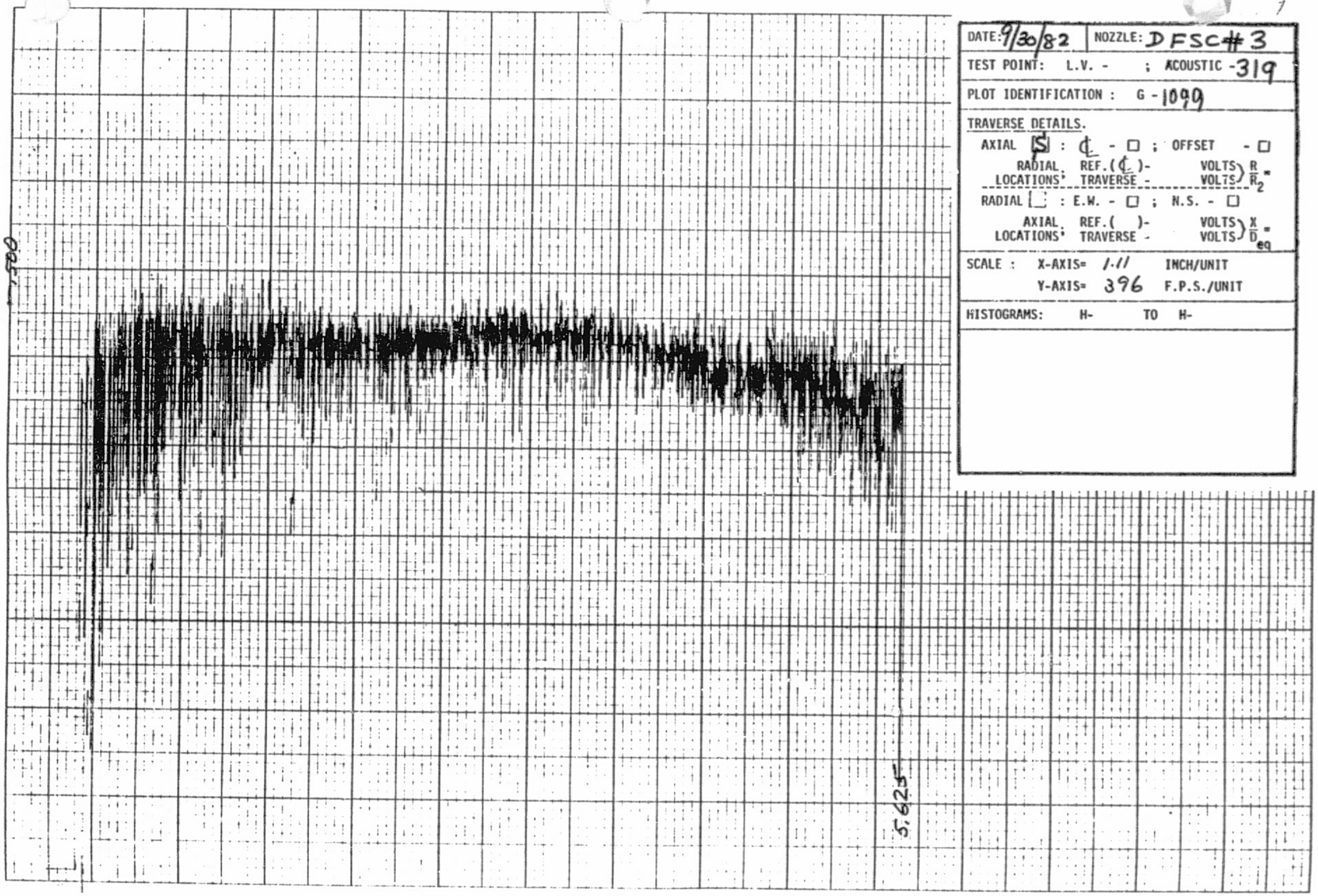
Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
319	3.317	1702	2453	3.128	872
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1707	2282	1513	0	5.29	0.77





DATE: 9/30/82 | NOZZLE: DFSC#3

TEST POINT: L.V. - ; ACOUSTIC - 319

PLOT IDENTIFICATION : G - 1099

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY1101

828

DATE: 9/30/82	NOZZLE: DFSC #3
TEST POINT: L.V. - ; ACOUSTIC - 319	
PLOT IDENTIFICATION : G - 1100	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

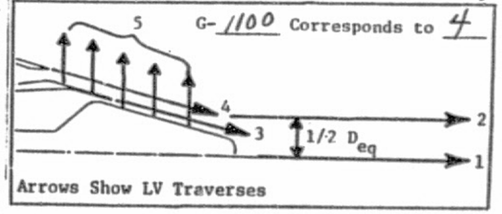
RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS) R/R2 =

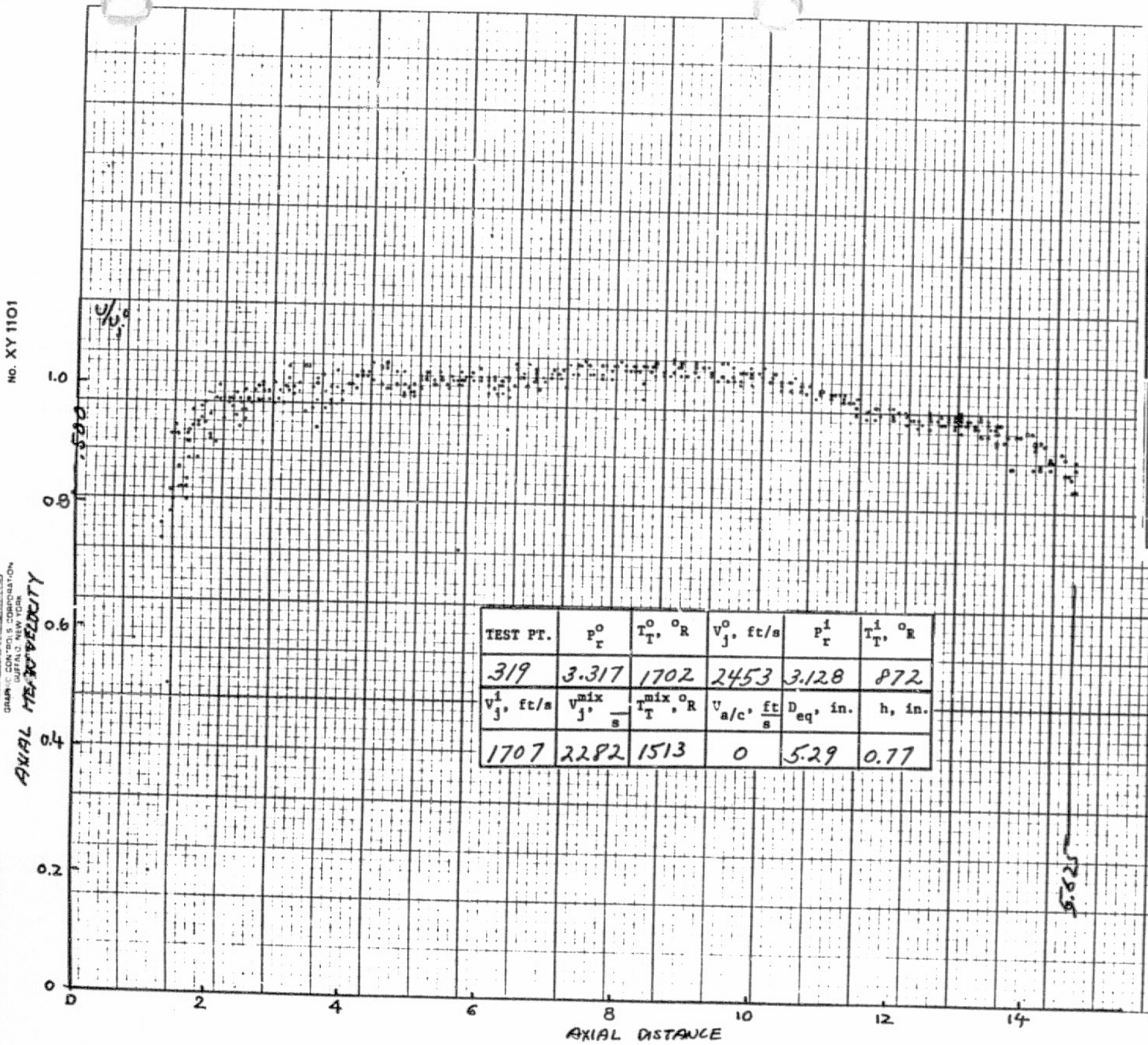
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS) X/Deq =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 396 F.P.S./UNIT

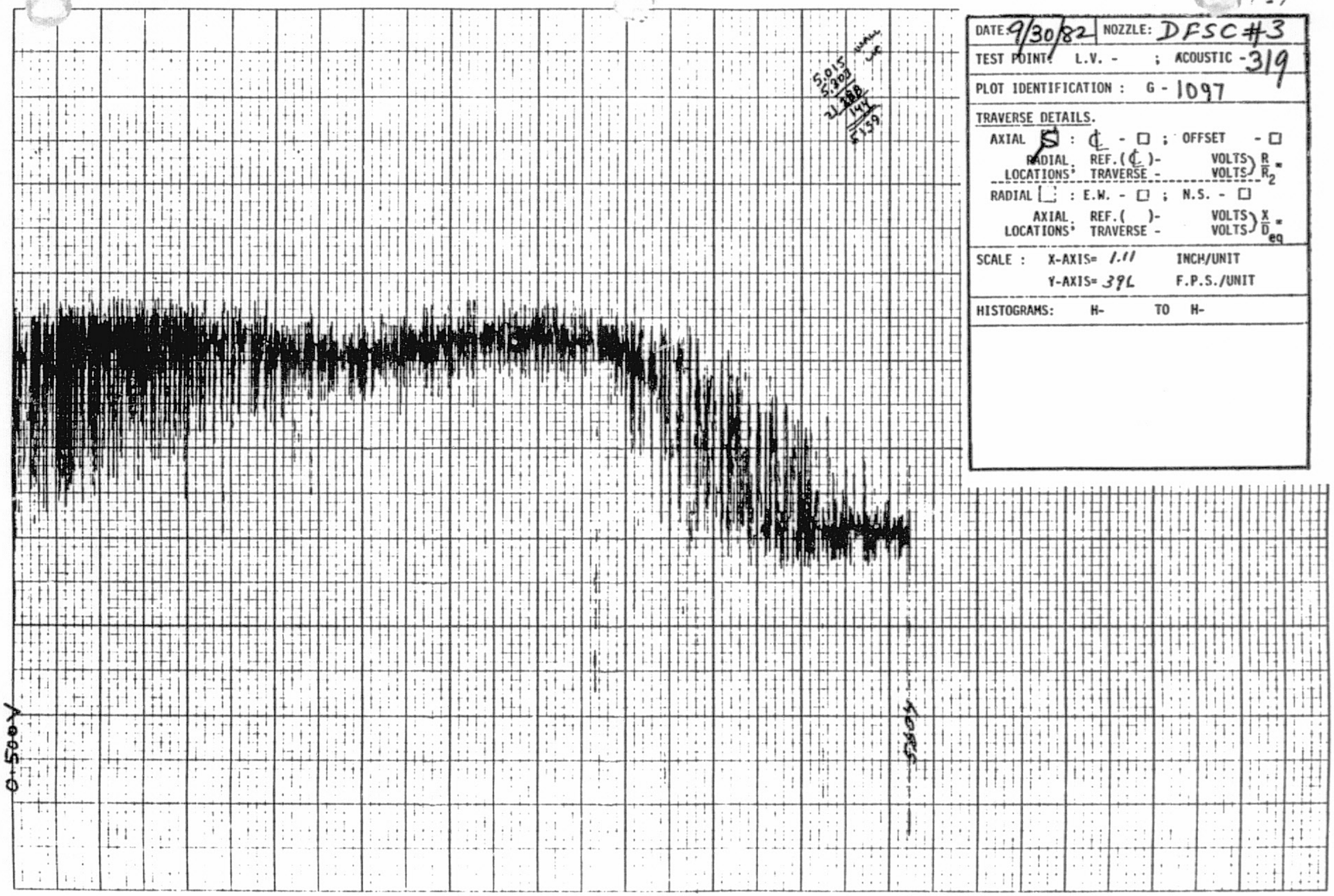
HISTOGRAMS: H- TO H-





TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
319	3.317	1702	2453	3.128	872
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1707	2282	1513	0	5.29	0.77

829



DATE: 9/30/82	NOZZLE: DFSC #3
TEST POINT: L.V. - ; ACOUSTIC - 319	
PLOT IDENTIFICATION : G - 1097	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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BUFFALO, NEW YORK

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DATE: 9/30/82 NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC - 319

PLOT IDENTIFICATION : G - 1098

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS } R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

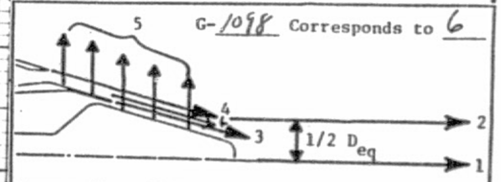
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS } X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

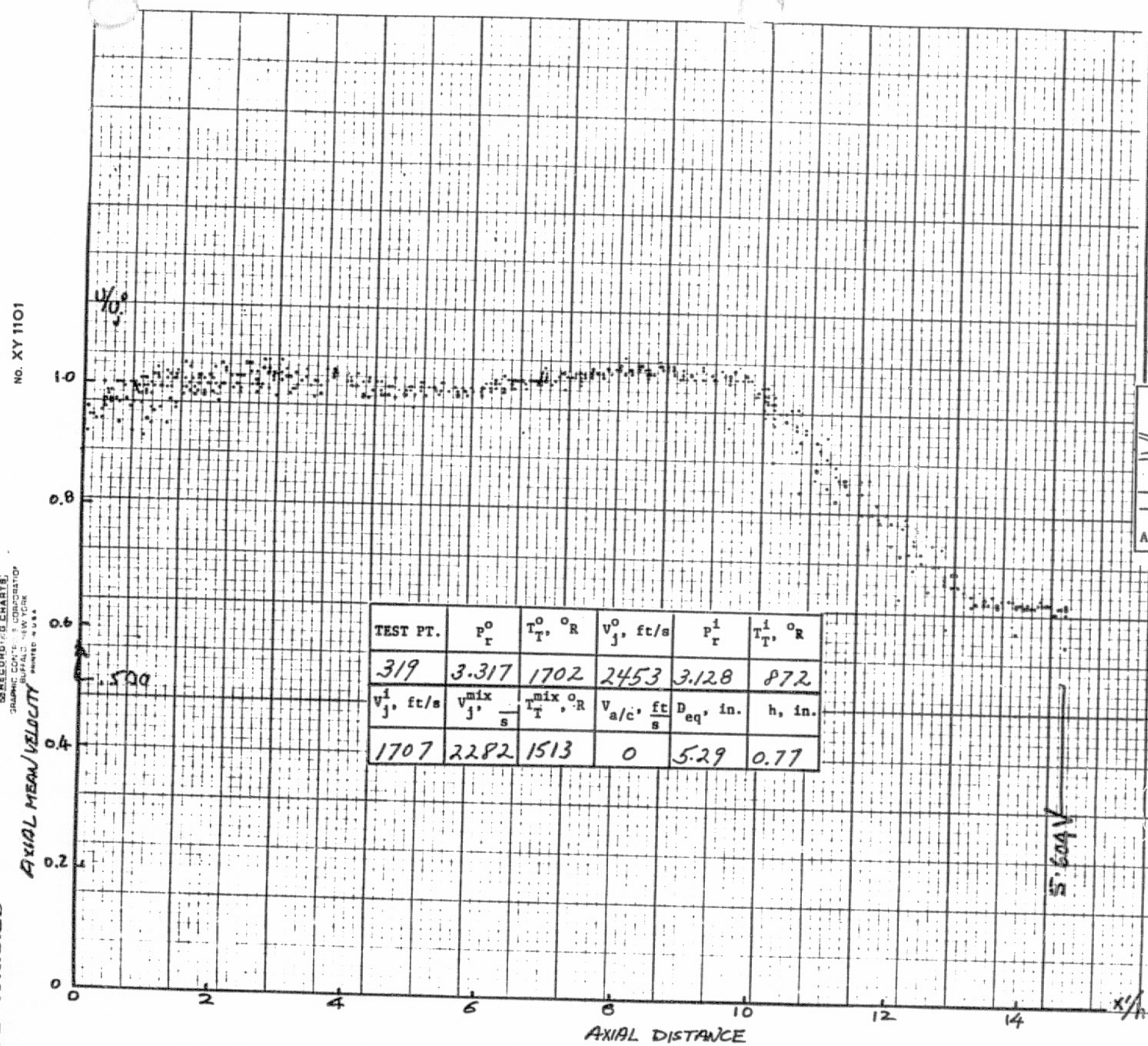
Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1098 Corresponds to 6



Arrows Show LV Traverses



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
319	3.317	1702	2453	3.128	872
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1707	2282	1513	0	5.29	0.77

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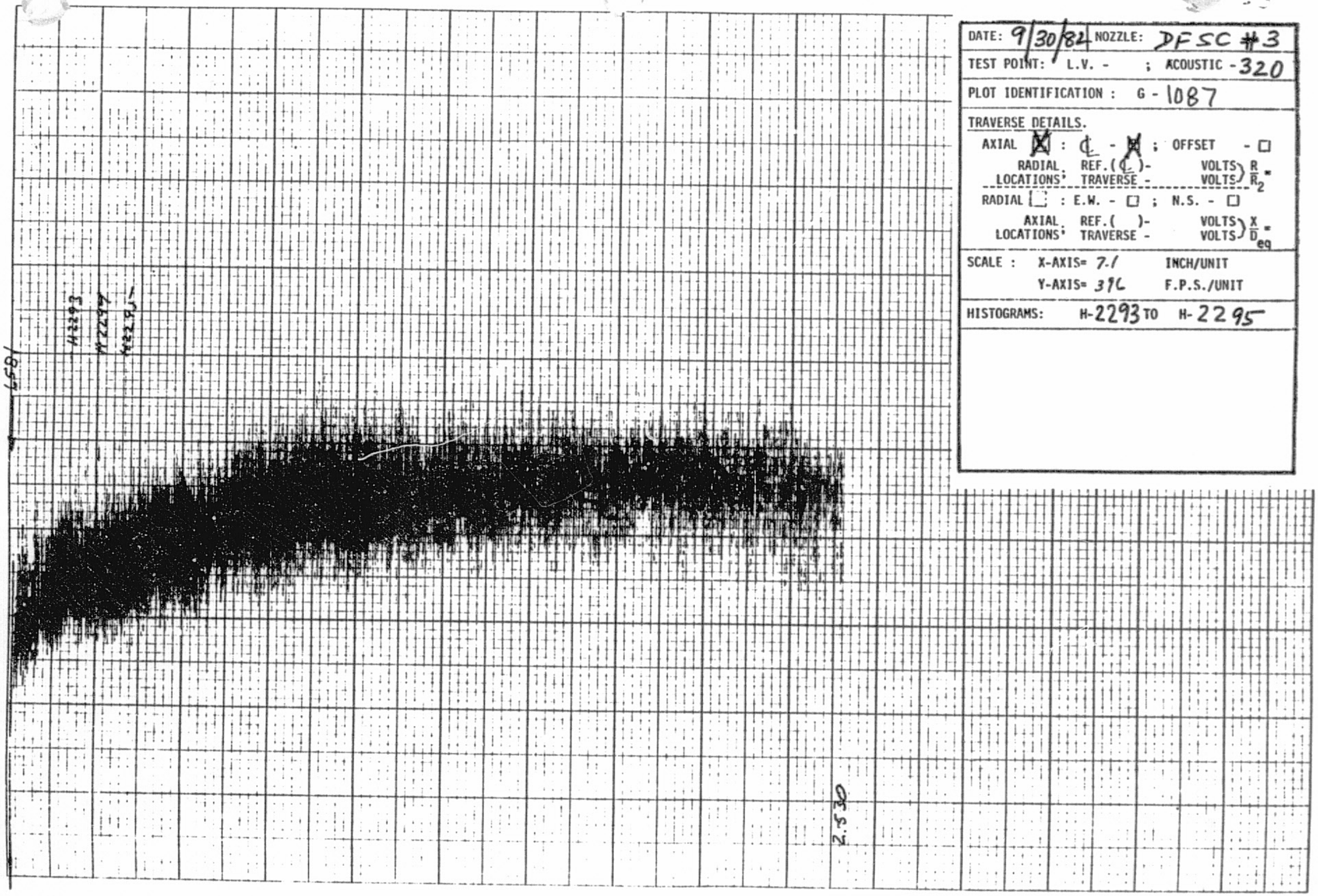

DATE: 9/30/82 NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC - 320

PLOT IDENTIFICATION : G - 1087

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H-2293 TO H-2295

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DATE: 9/30/82 | NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC - 320

PLOT IDENTIFICATION : G - 1088

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

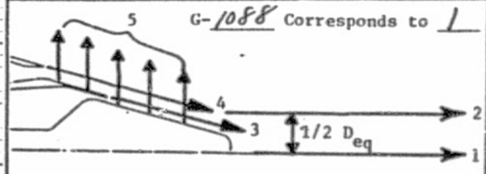
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

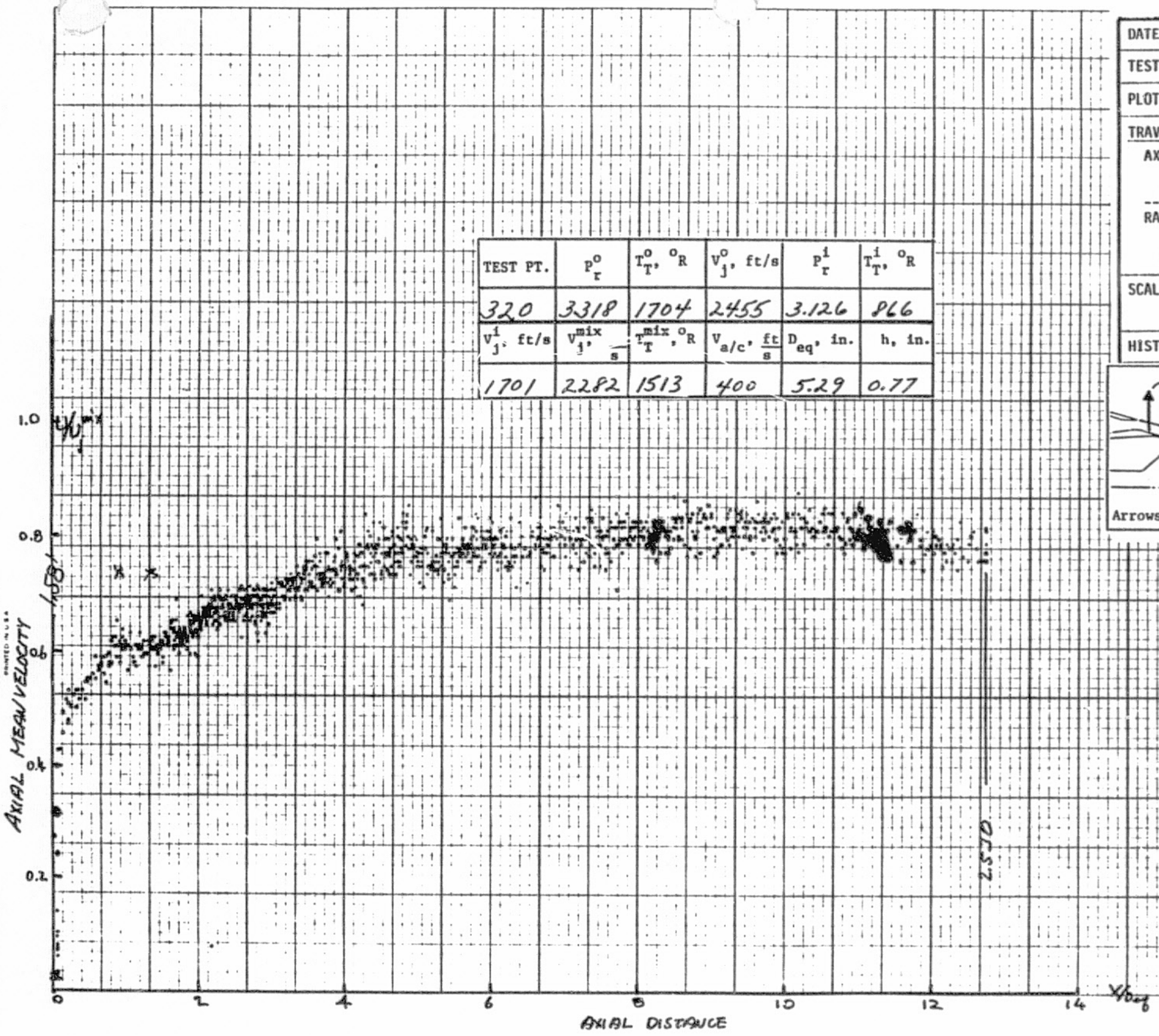
SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
320	3318	1704	2455	3.126	866
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1701	2282	1513	400	5.29	0.77



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BUFFALO, NEW YORK

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DATE: 9/30/82 NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC - 320

PLOT IDENTIFICATION : G - 1089

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

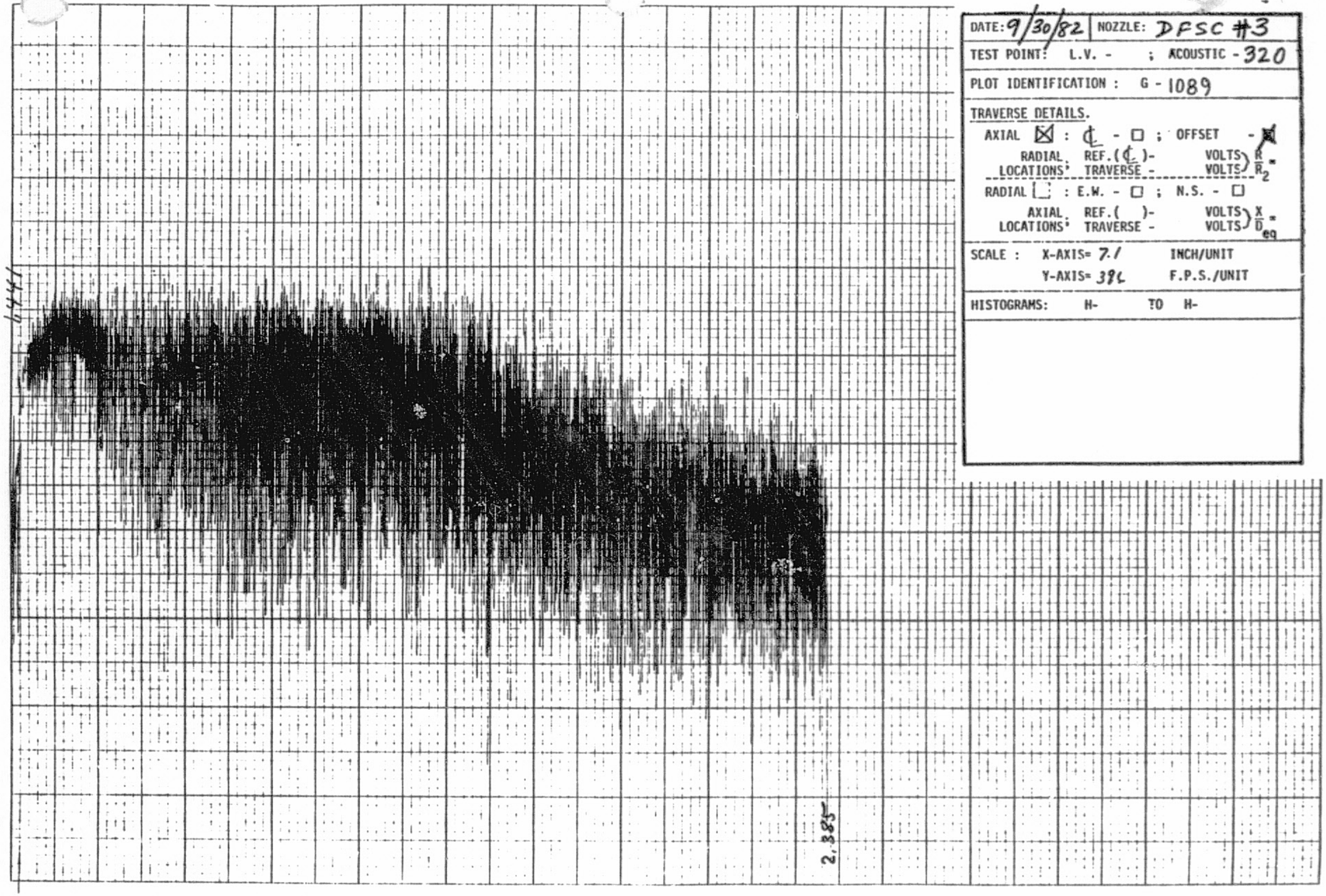
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



834

DATE: 9/30/82	NOZZLE: DFSc #3
TEST POINT: L.V. - ; ACOUSTIC - 320	
PLOT IDENTIFICATION : G - 1090	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

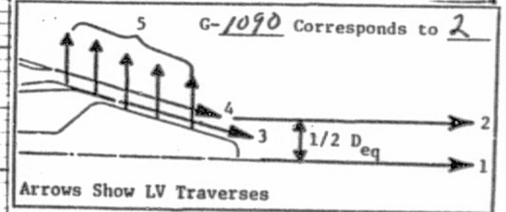
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

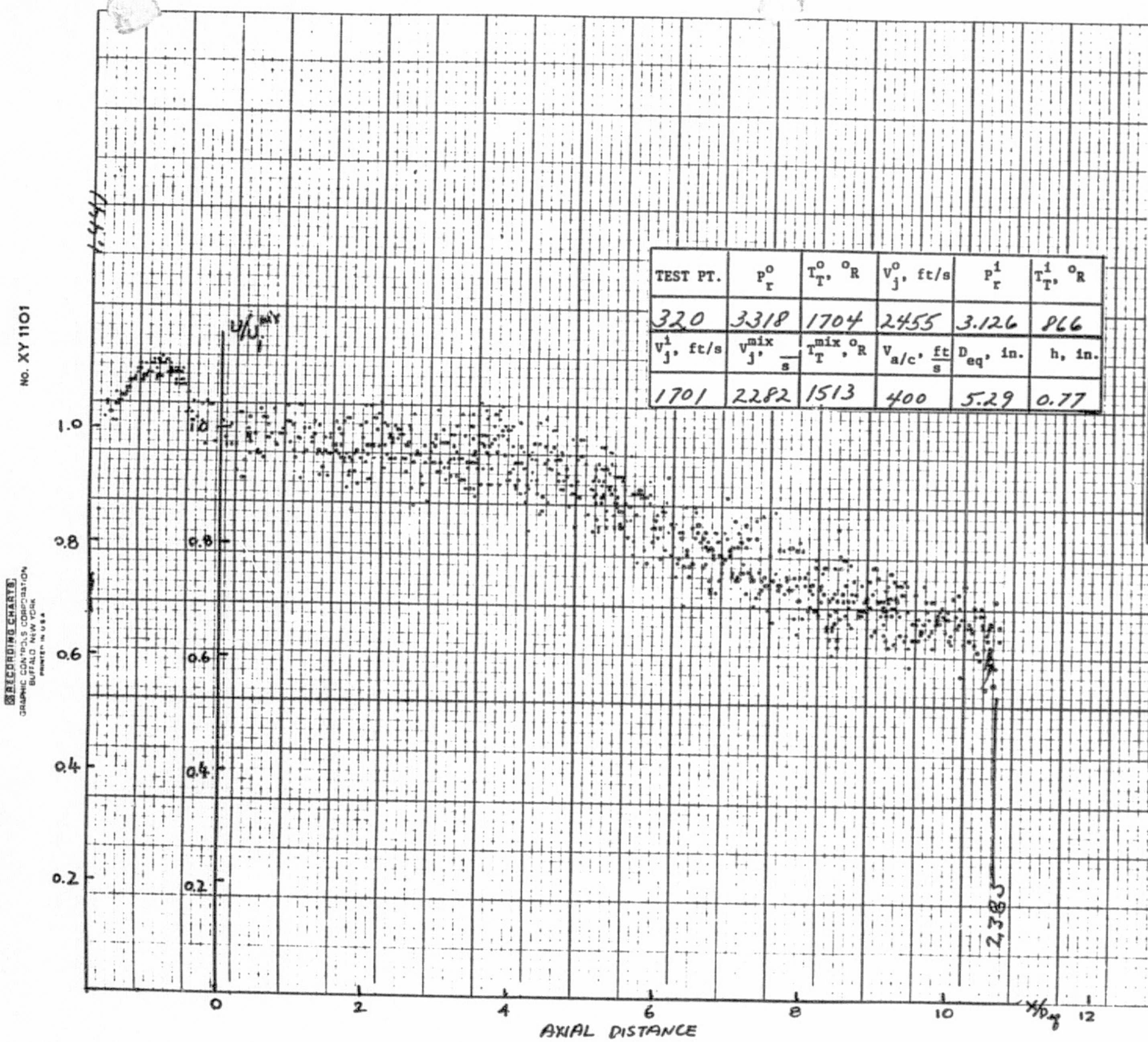
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT; Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
320	3318	1704	2455	3.126	866
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1701	2282	1513	400	5.29	0.77



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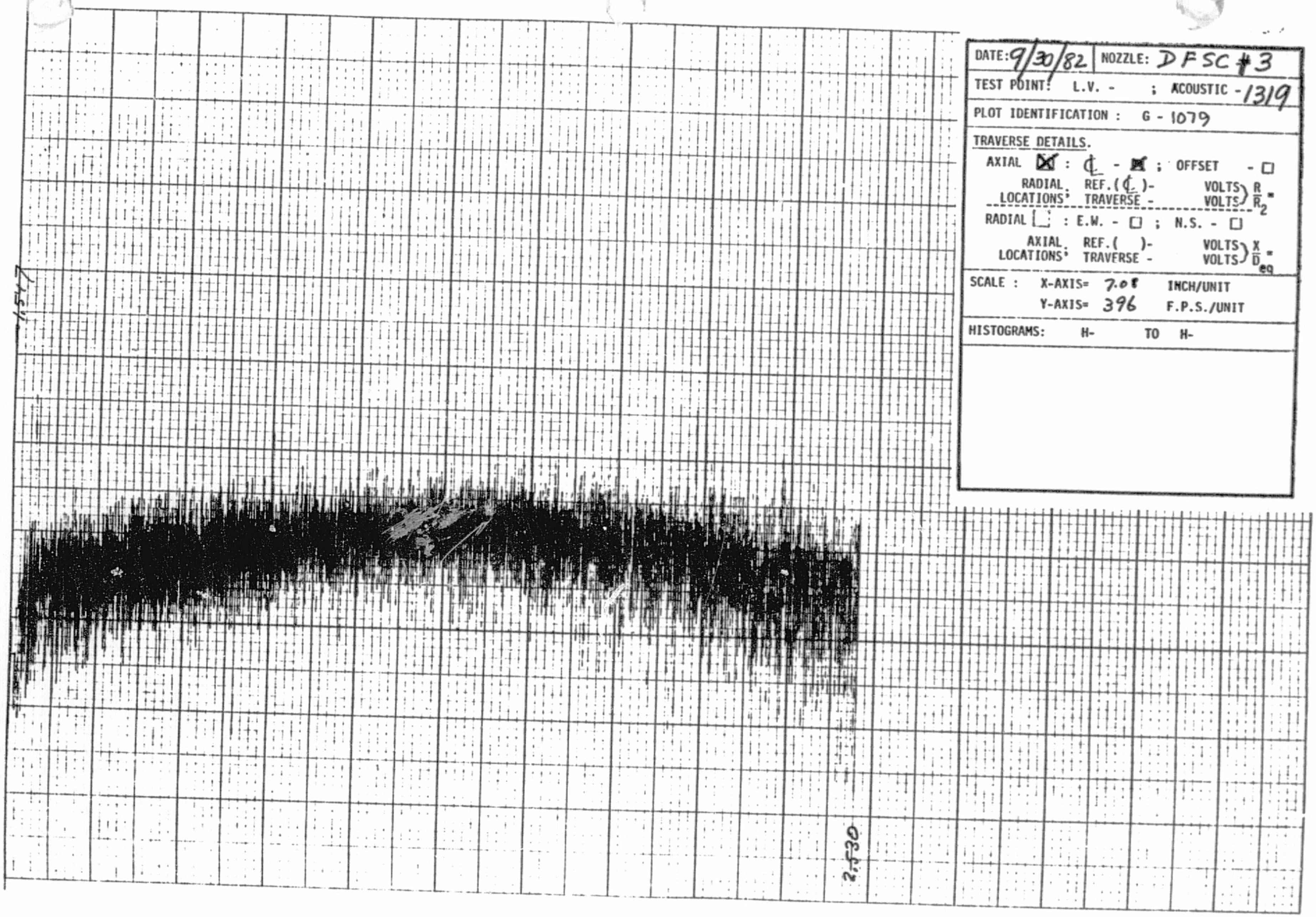

DATE: 9/30/82	NOZZLE: DFSC #3
TEST POINT: L.V. - ; ACOUSTIC - 1319	
PLOT IDENTIFICATION : G - 1079	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

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DATE: 9/30/82 NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC 1319

PLOT IDENTIFICATION : G - 1080

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

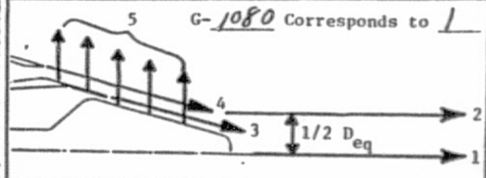
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

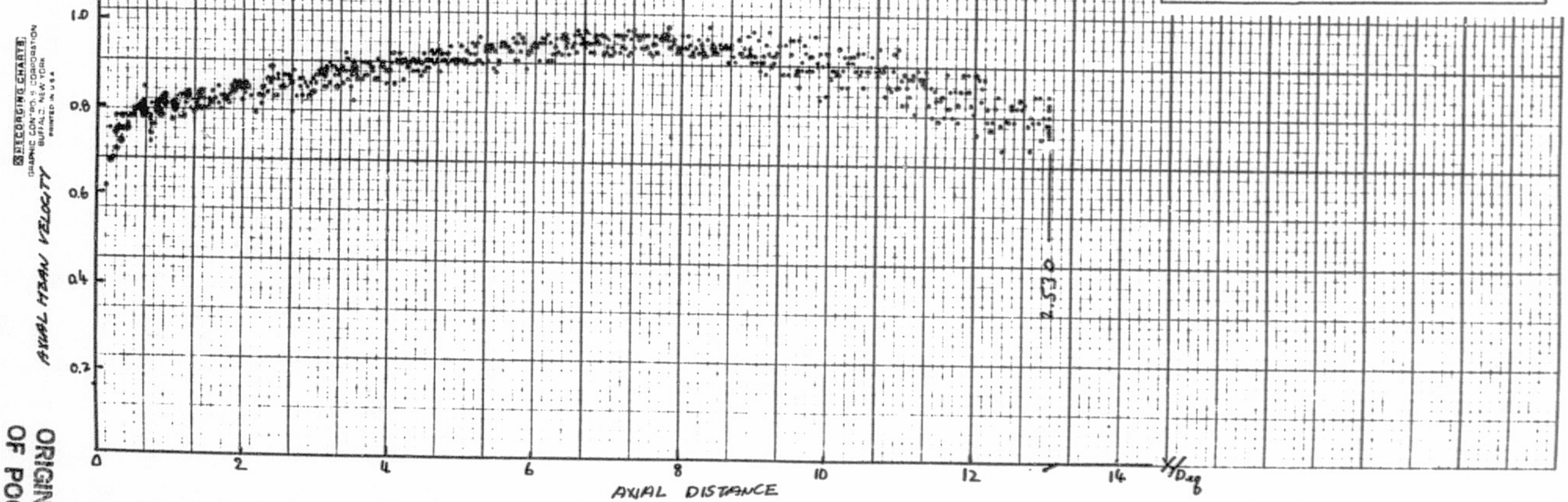
HISTOGRAMS: H- TO H-

G- 1080 Corresponds to 1



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1319	3.389	870	1755	3.122	847
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1681	1742	866	0	5.29	0.77



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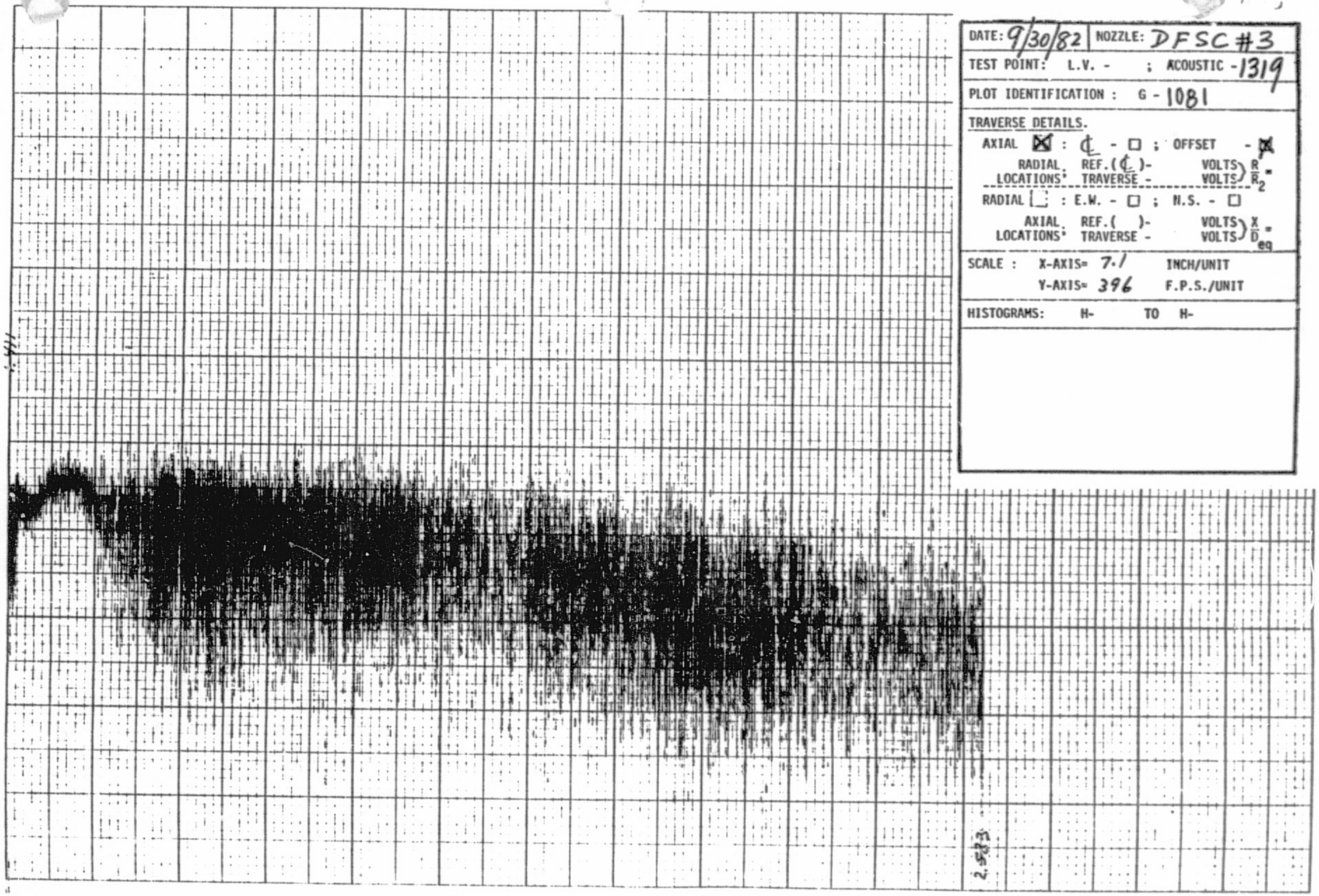


DATE: 9/30/82 | NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC - 1319

PLOT IDENTIFICATION : G - 1081

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS) VOLTS) $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS) VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

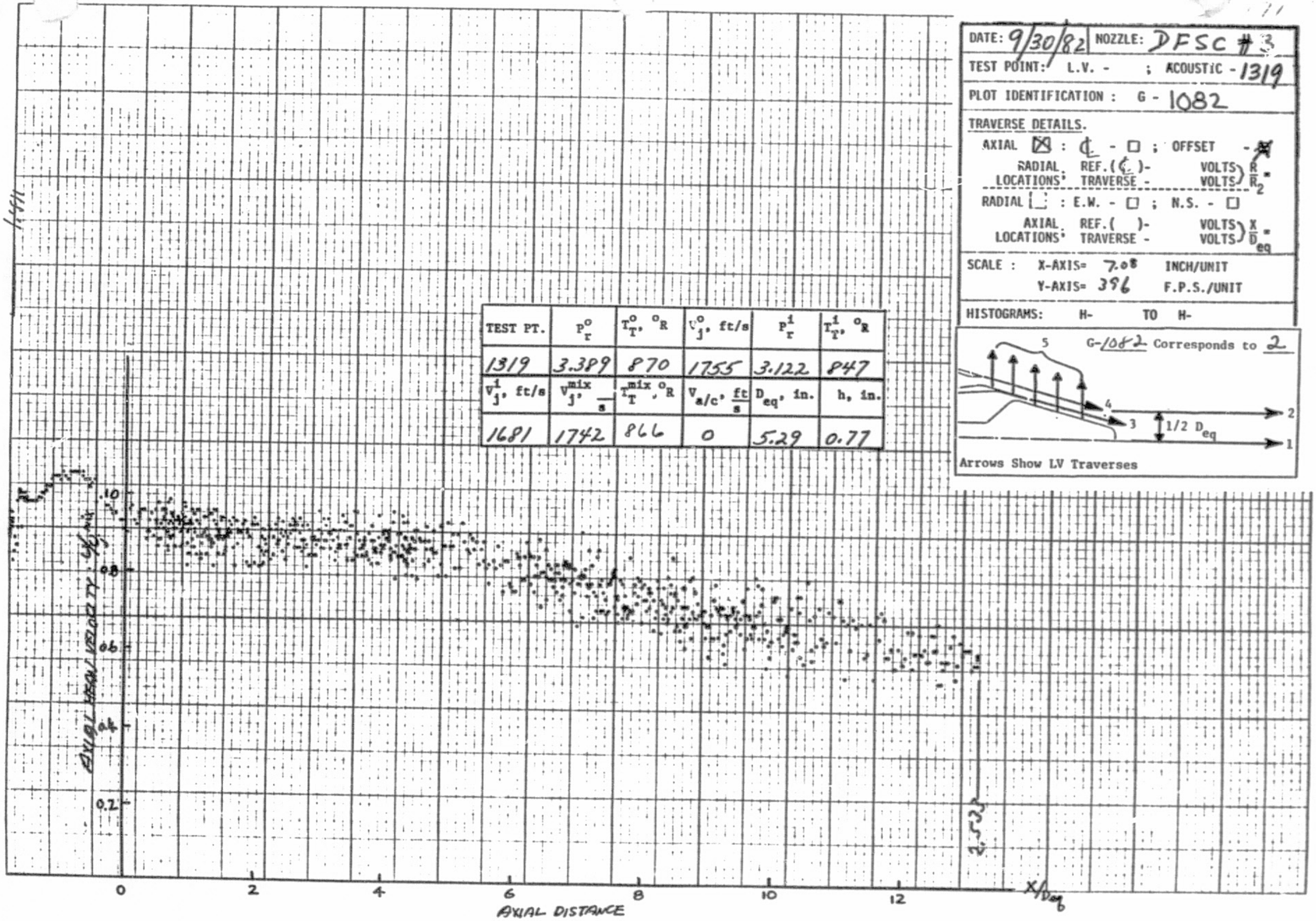
Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

838

No. XY 1101

839



DATE: 9/30/82 NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC - 1319

PLOT IDENTIFICATION : G - 1082

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)-TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )-TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1319	3.389	870	1755	3.122	847
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1681	1742	866	0	5.29	0.77

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DATE: 9/30/82 NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC - 1320

PLOT IDENTIFICATION : G - 10B3

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

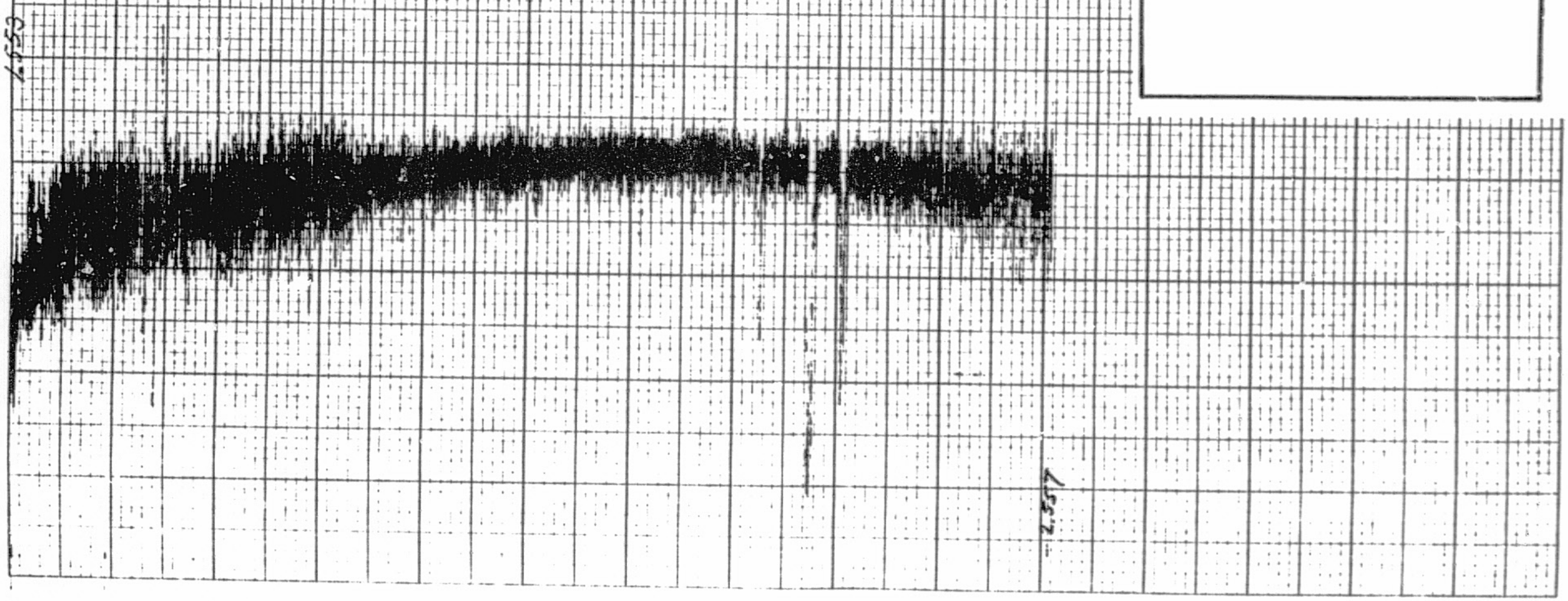
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS) VOLTS) $\frac{r}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS) VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT
Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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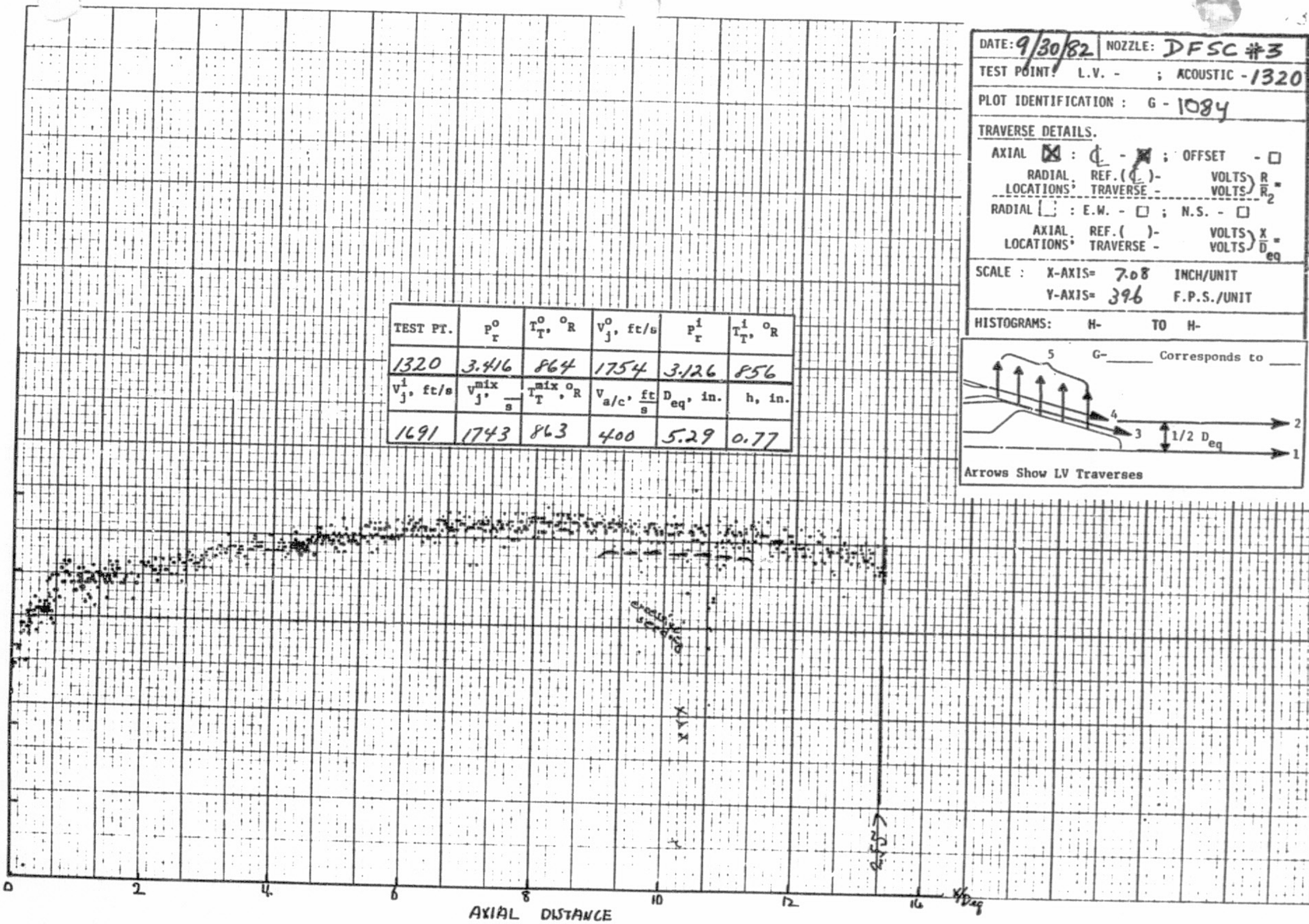

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1320	3.416	864	1754	3.126	856
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1691	1743	863	400	5.29	0.77

DATE: 9/30/82 NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC - 1320

PLOT IDENTIFICATION : G - 1084

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-____ Corresponds to ____

NO. XY 11101

841

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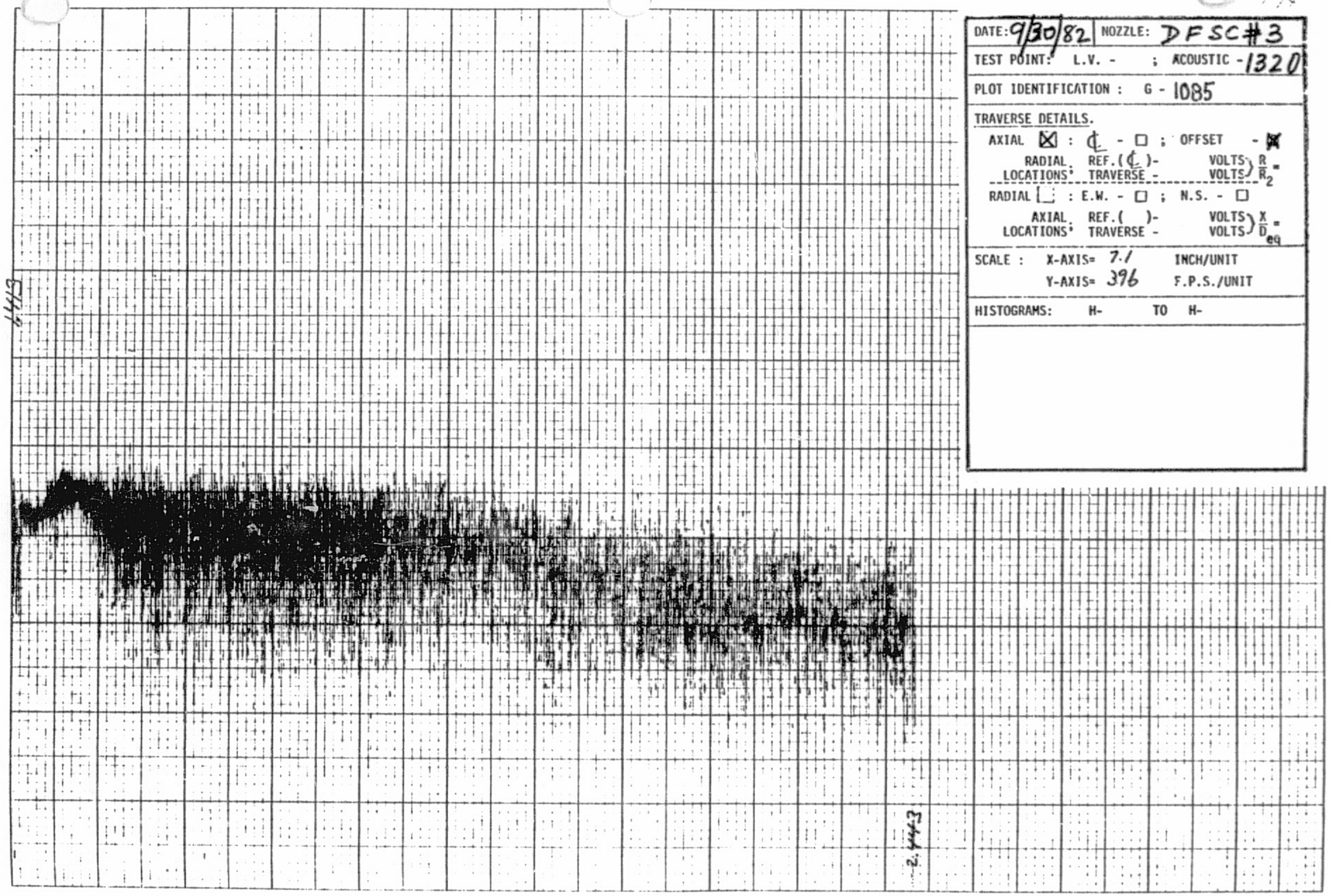

DATE: 9/30/82 NOZZLE: DFSC#3

TEST POINT: L.V. - ; ACOUSTIC - 1320

PLOT IDENTIFICATION : G - 1085

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS / VOLTS) $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS / VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

842

RECORDING CHARTS
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK

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DATE: 9/30/82	NOZZLE: DFSC #3
TEST POINT: L.V. - ; ACOUSTIC - 1320	
PLOT IDENTIFICATION : G - 1086	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

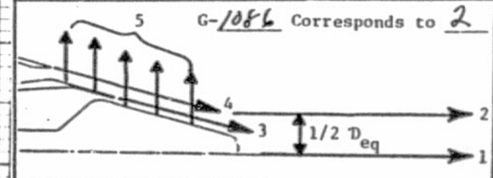
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

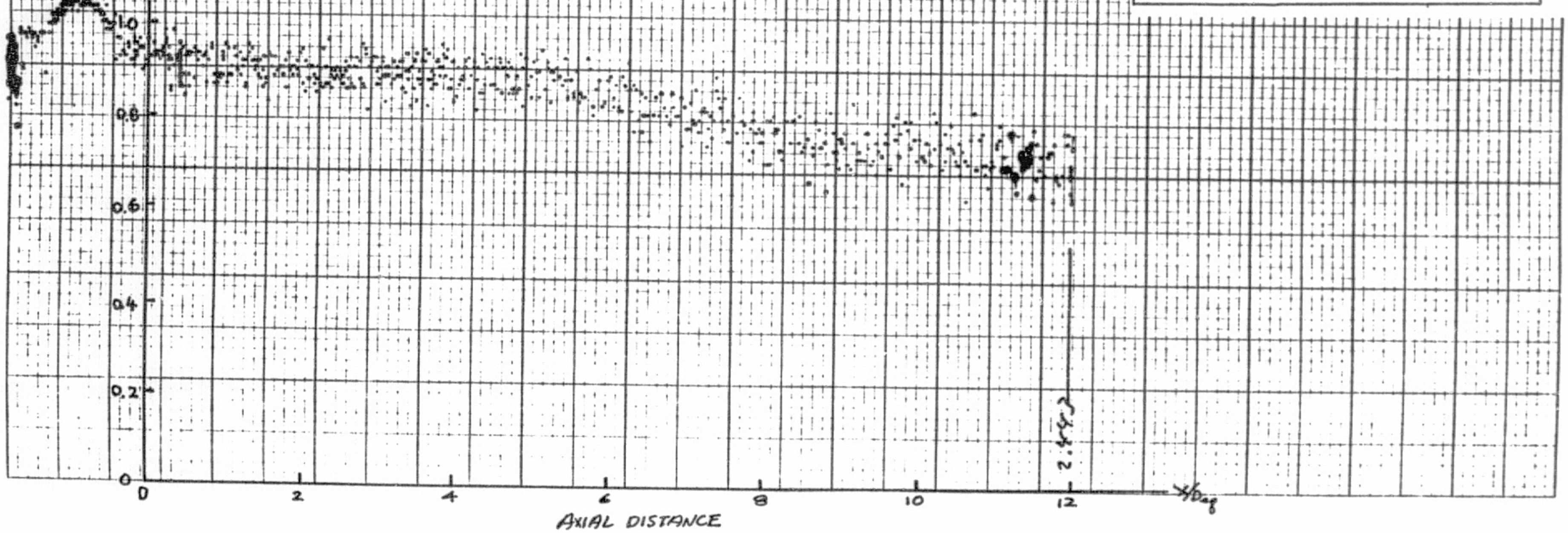
HISTOGRAMS: H- TO H-

G-1086 Corresponds to 2



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1320	3.416	864	1754	3.126	856
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1691	1743	863	400	5.29	0.77



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843

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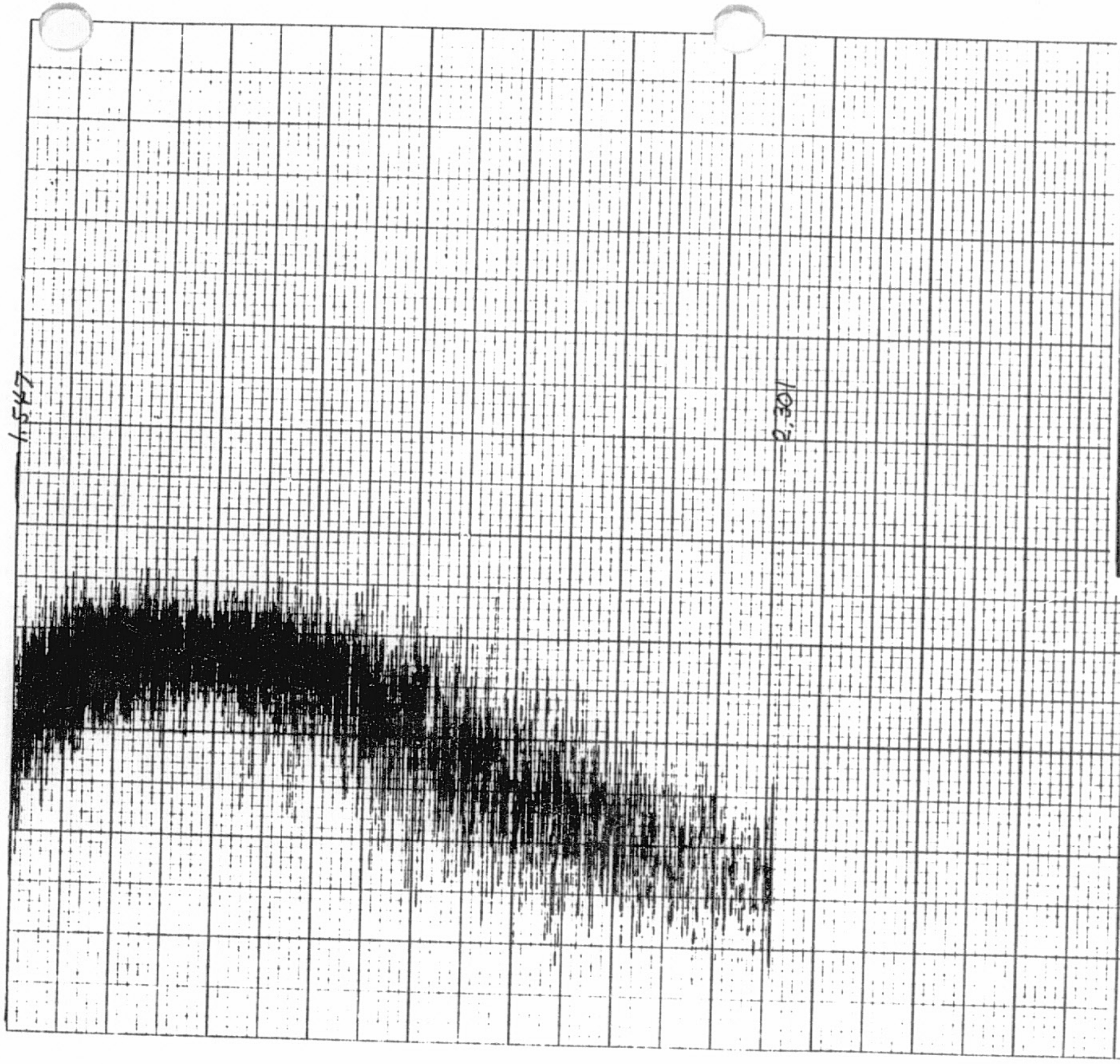


DATE: 9/30/82 NOZZLE: DFSC #3

TEST POINT: L.V. - ; ACOUSTIC - 301

PLOT IDENTIFICATION : G - 1077

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS) $\frac{R}{R_2}$ = VOLTS)

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS) $\frac{X}{D_{eq}}$ = VOLTS)

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

844

DATE: 9/30/82	NOZZLE: DFSC #3
TEST POINT: L.V. - ; ACOUSTIC - 301	
PLOT IDENTIFICATION : G - 1078	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

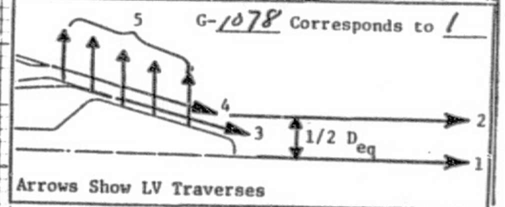
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

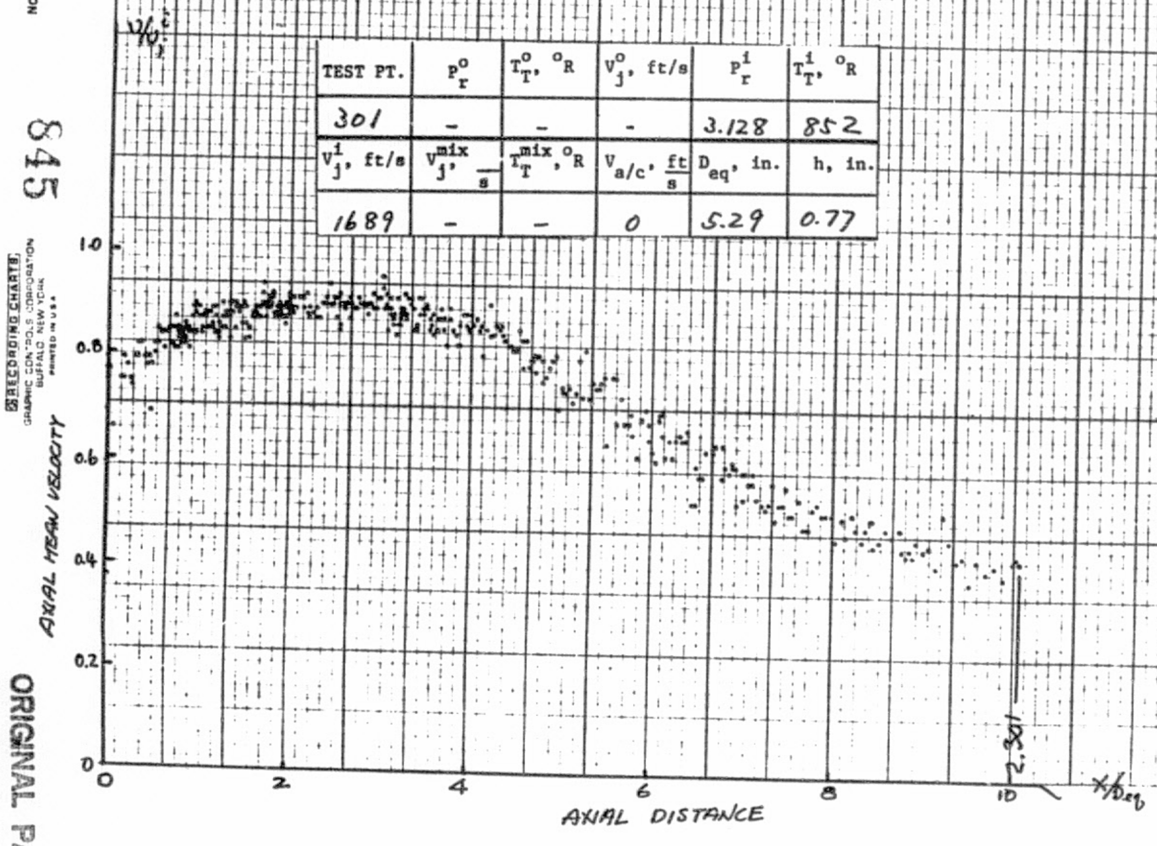
SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 396 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
301	-	-	-	3.128	852
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1689	-	-	0	5.29	0.77



845

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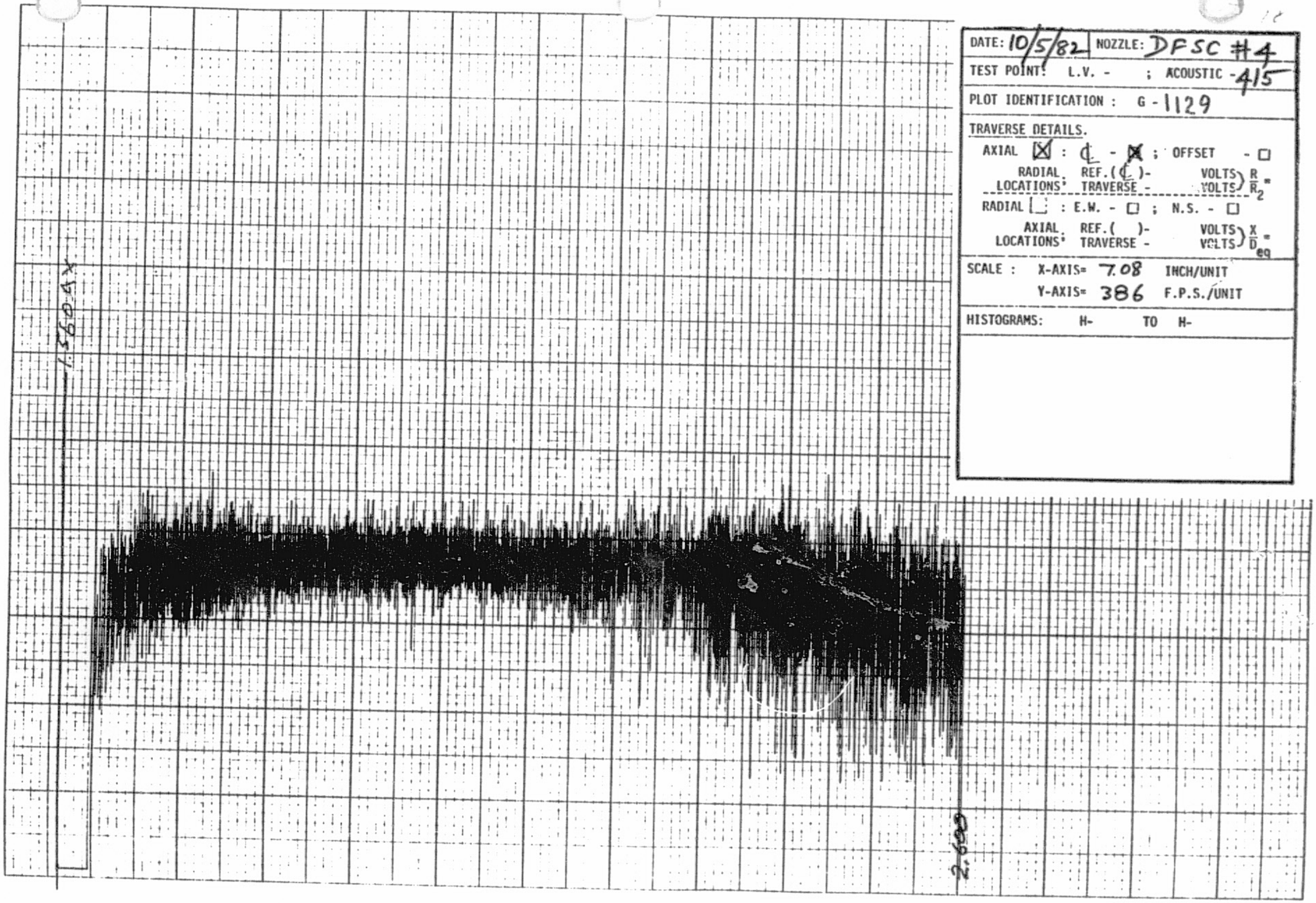
5.2.3.4 Mean Velocity Traces of DFSC-4



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DATE: 10/5/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 415	
PLOT IDENTIFICATION : G - 1130	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS) $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

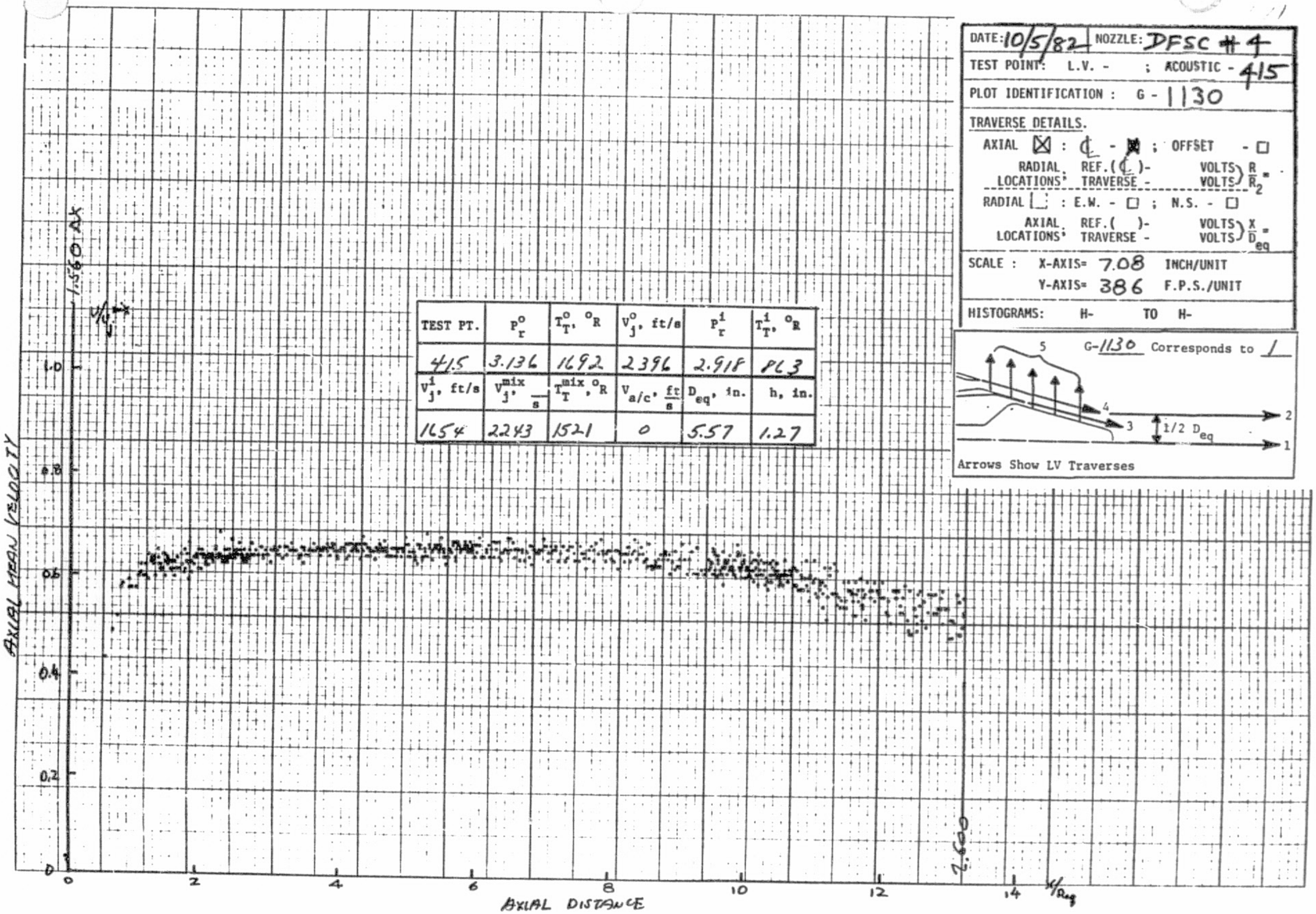
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1130 Corresponds to 1

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
415	3.136	1692	2396	2.918	863
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1654	2243	1521	0	5.57	1.27



848

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NO. XY 1 31

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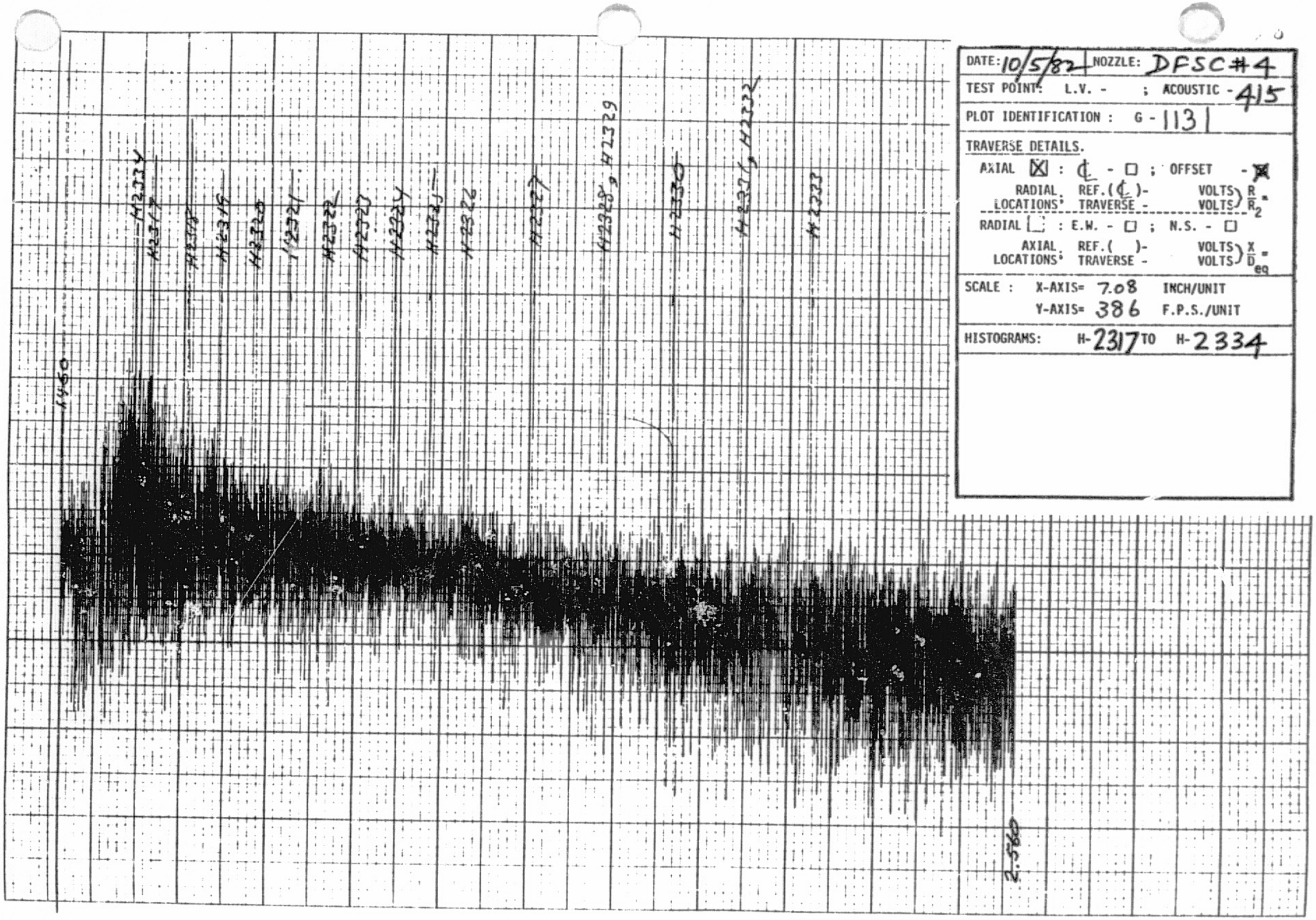

DATE: 10/5/82	NOZZLE: DFSC#4
TEST POINT: L.V. - ; ACOUSTIC - 415	
PLOT IDENTIFICATION : G - 1131	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H-2317 TO H-2334

NO. XY 1101

849

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TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
415	3.136	1692	2396	2.918	863
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1654	2243	1521	0	5.57	1.27

DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 415

PLOT IDENTIFICATION : G - 1132

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

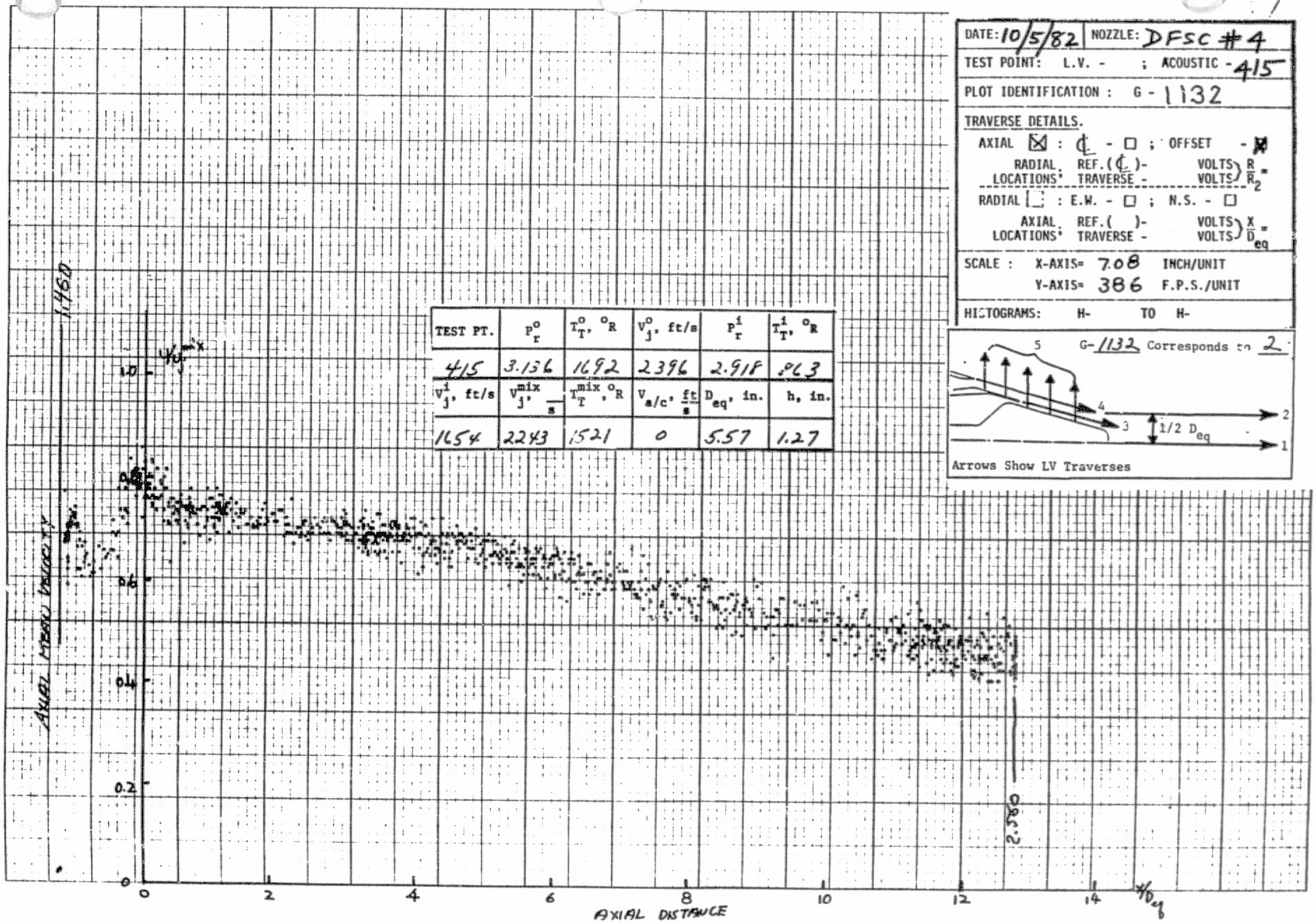
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

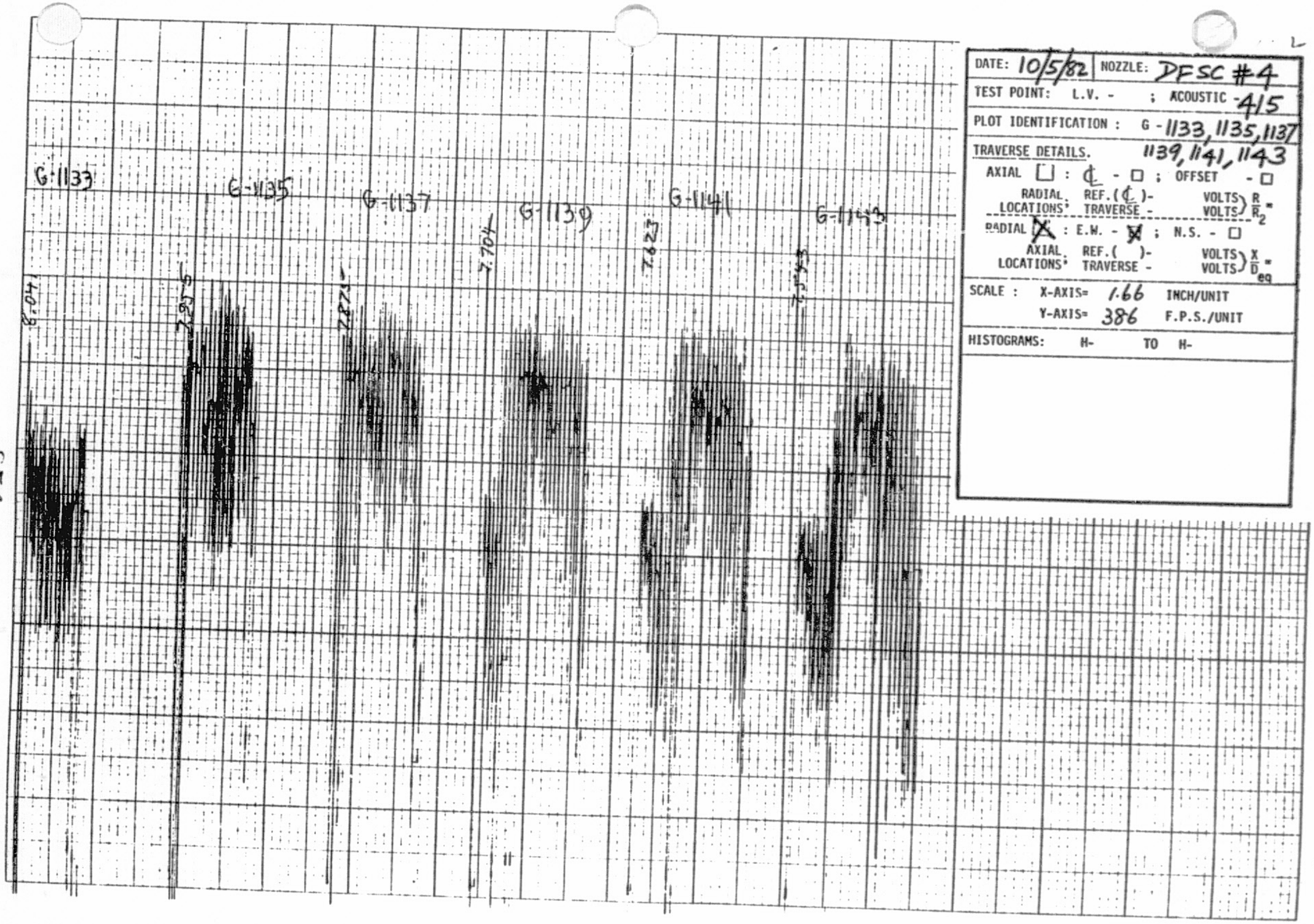
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1132 Corresponds to 2



Arrows Show LV Traverses



DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 415

PLOT IDENTIFICATION : G - 1133, 1135, 1137, 1139, 1141, 1143

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

851

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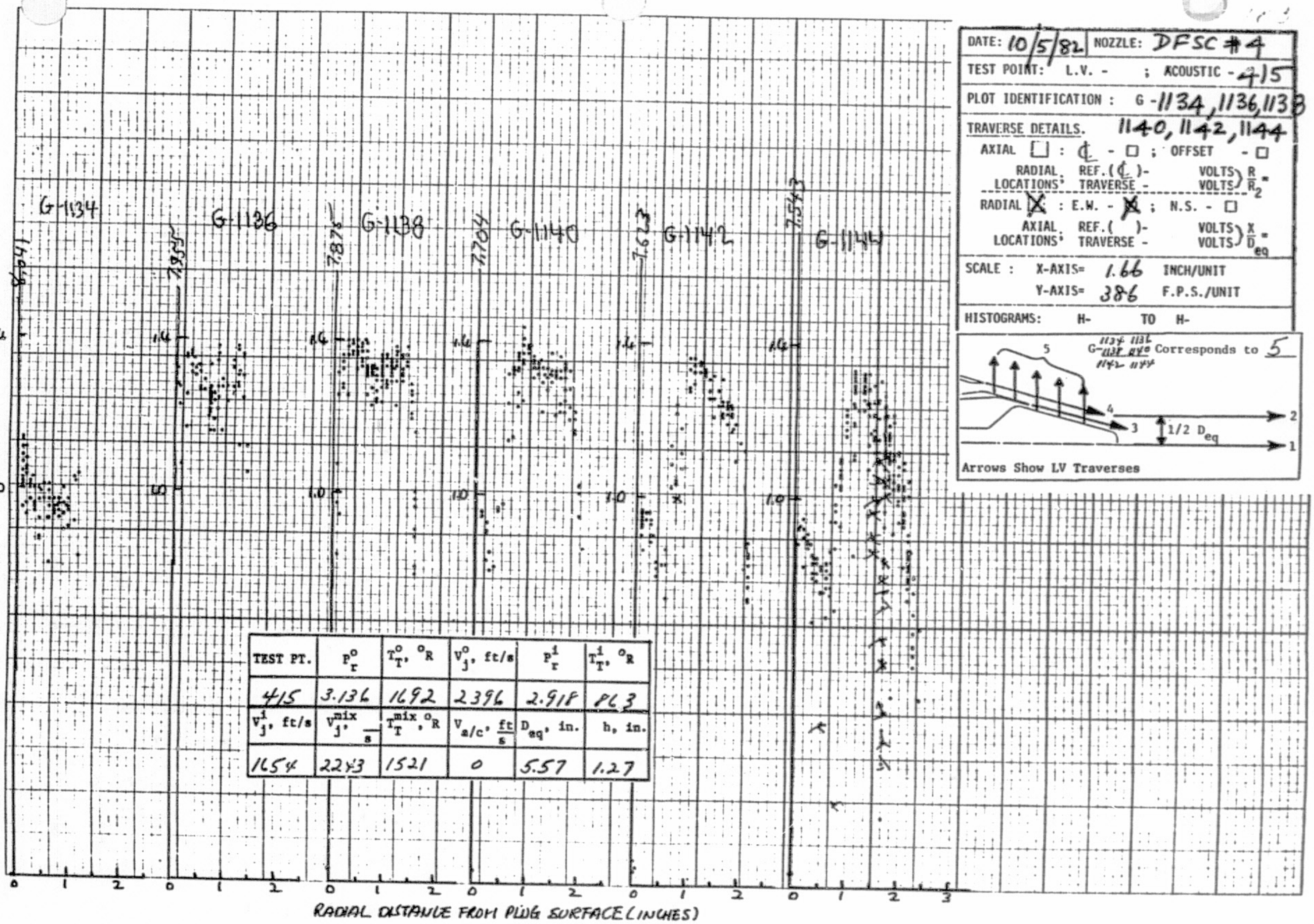
NO. XY 1101



DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 415

PLOT IDENTIFICATION : G - 1134, 1136, 1138, 1140, 1142, 1144

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
415	3.136	1692	2396	2.918	863
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1654	2243	1521	0	5.57	1.27

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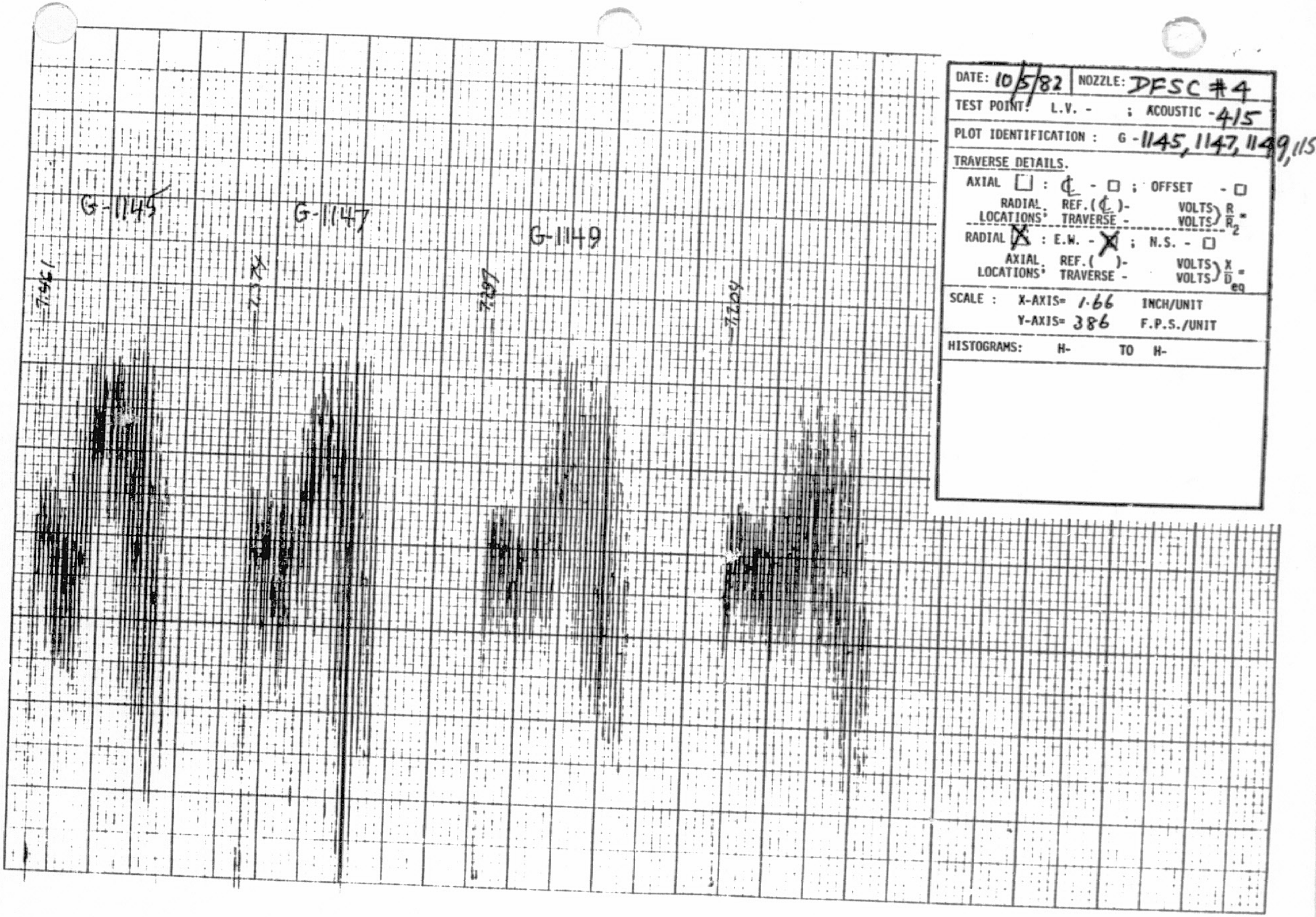

NO. XY 1101

853

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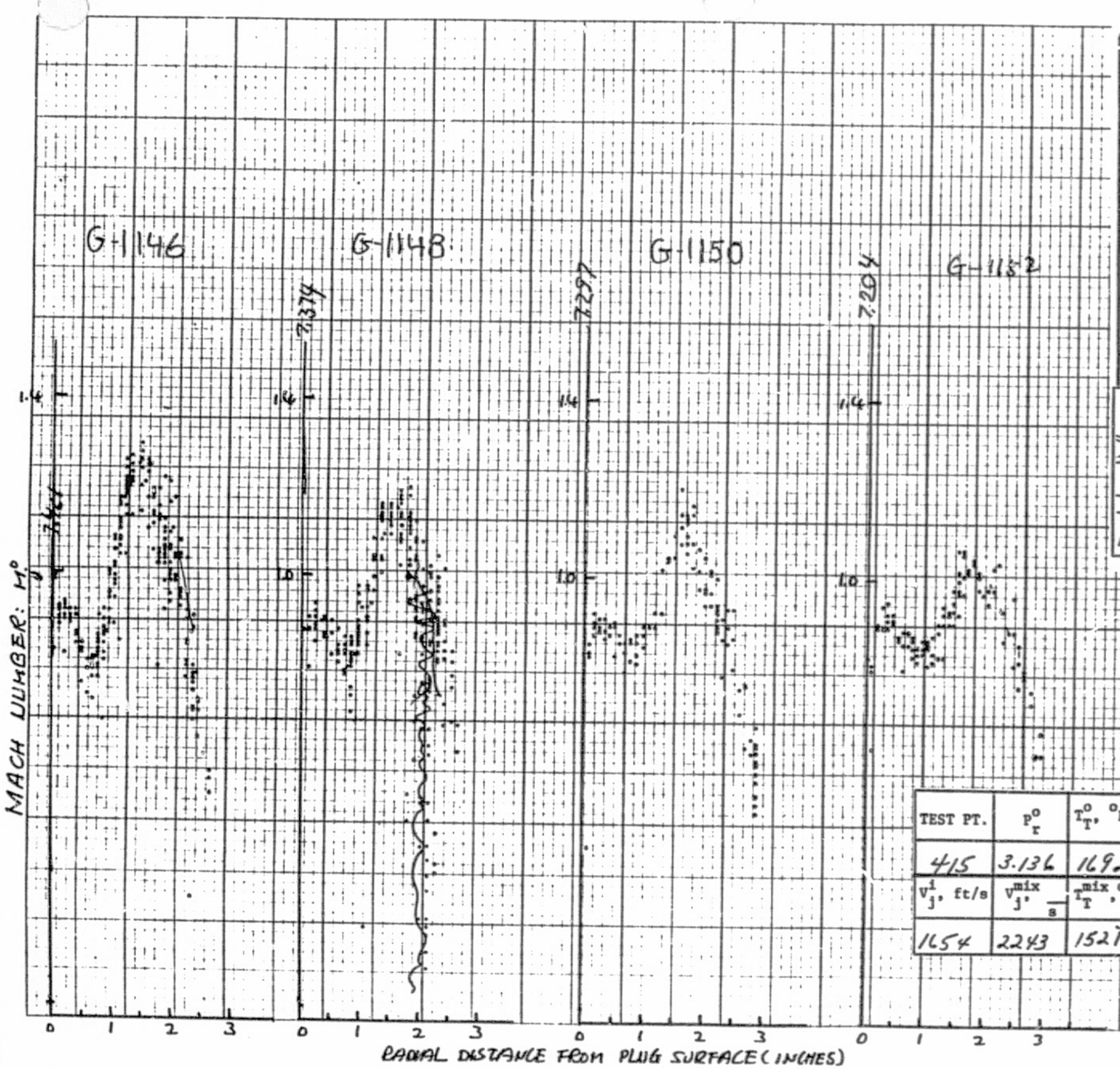
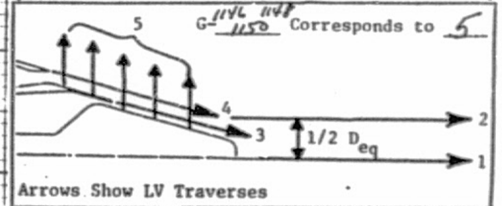
NO. XY 1101

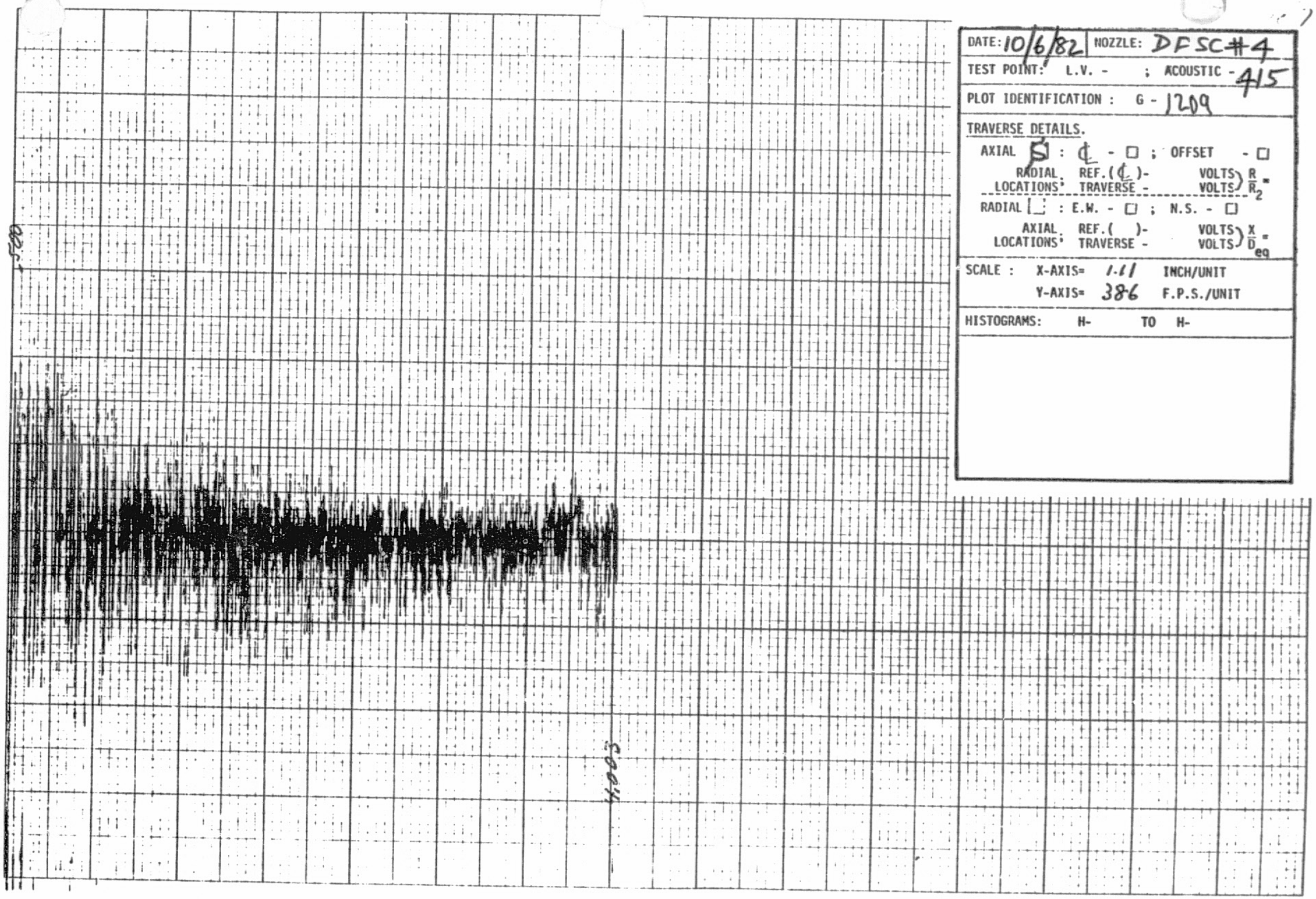
854



DATE: 10/5/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 415	
PLOT IDENTIFICATION : G - 1146, 1148, 1150, 1152	
TRAVERSE DETAILS. AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐	
RADIAL LOCATIONS; REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =	
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐	
AXIAL LOCATIONS; REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq}	
SCALE : X-AXIS= 1.66 INCH/UNIT	
Y-AXIS= 386 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
415	3.136	1692	2396	2.918	863
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1654	2243	1521	0	5.57	1.27



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855

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DATE: 10/6/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 415	
PLOT IDENTIFICATION : G - 1210	

TRAVERSE DETAILS.

AXIAL [5] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS, REF.(℄)- TRAVERSE - VOLTS) VOLTS) $\frac{R}{R_2}$ =

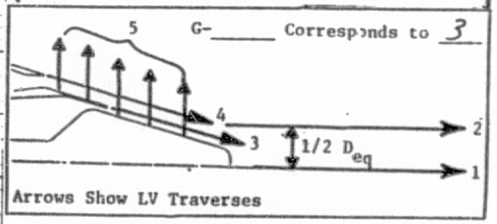
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS, REF.( )- TRAVERSE - VOLTS) VOLTS) $\frac{X}{D_{eq}}$ =

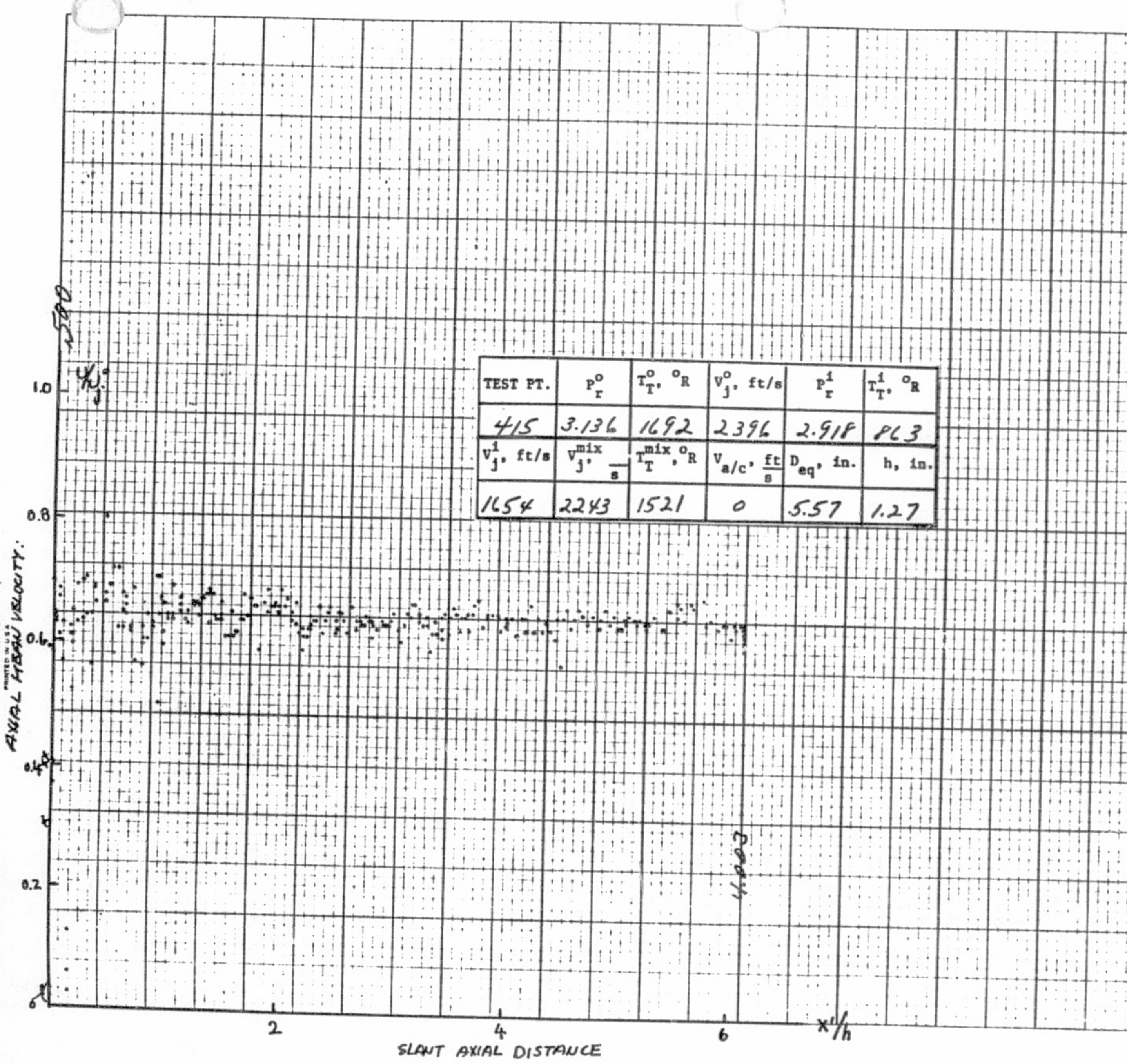
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
415	3.136	1692	2396	2.918	863
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1654	2243	1521	0	5.57	1.27



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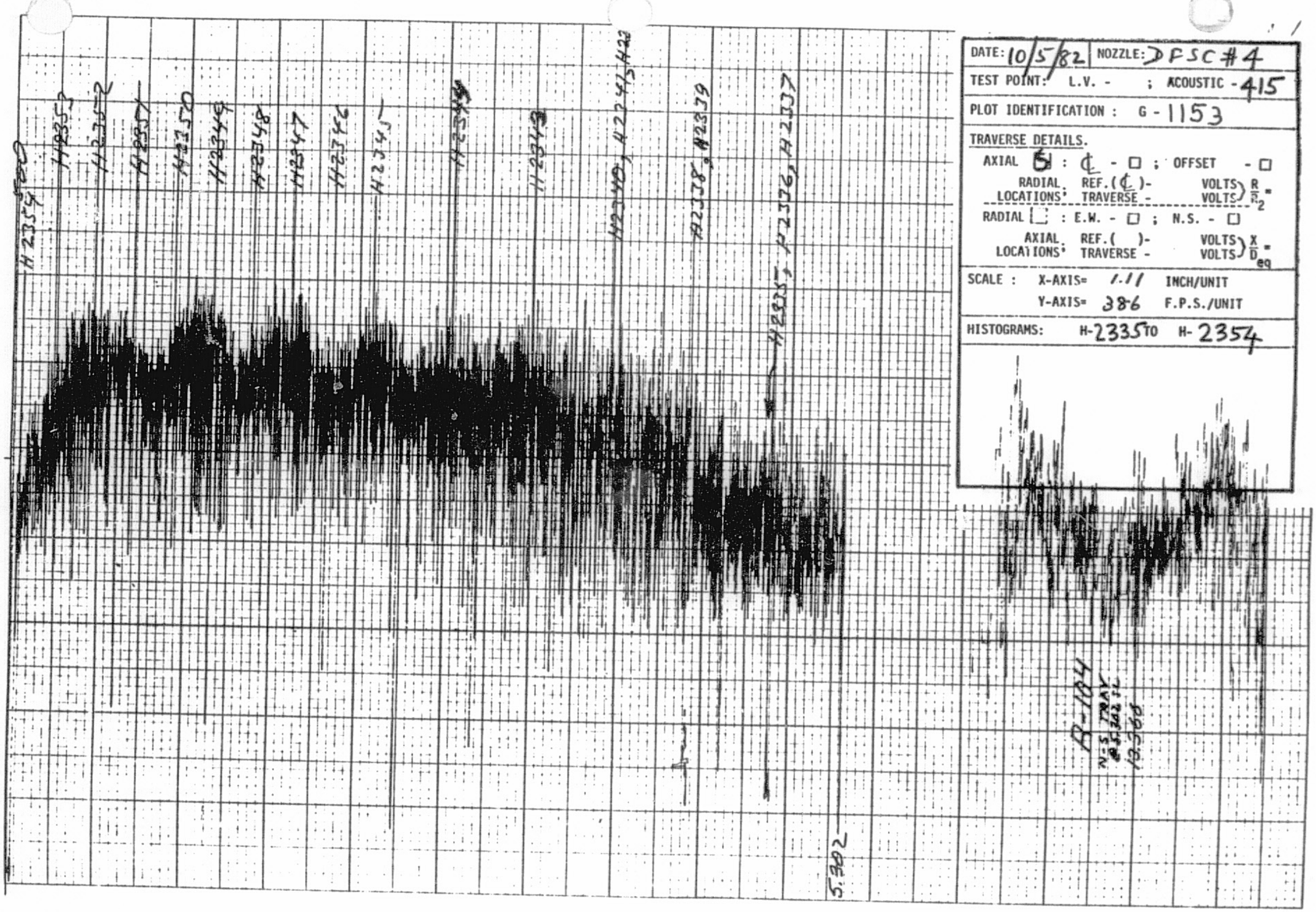

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858

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DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 415

PLOT IDENTIFICATION : G - 1154

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

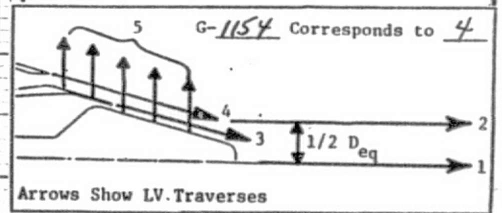
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

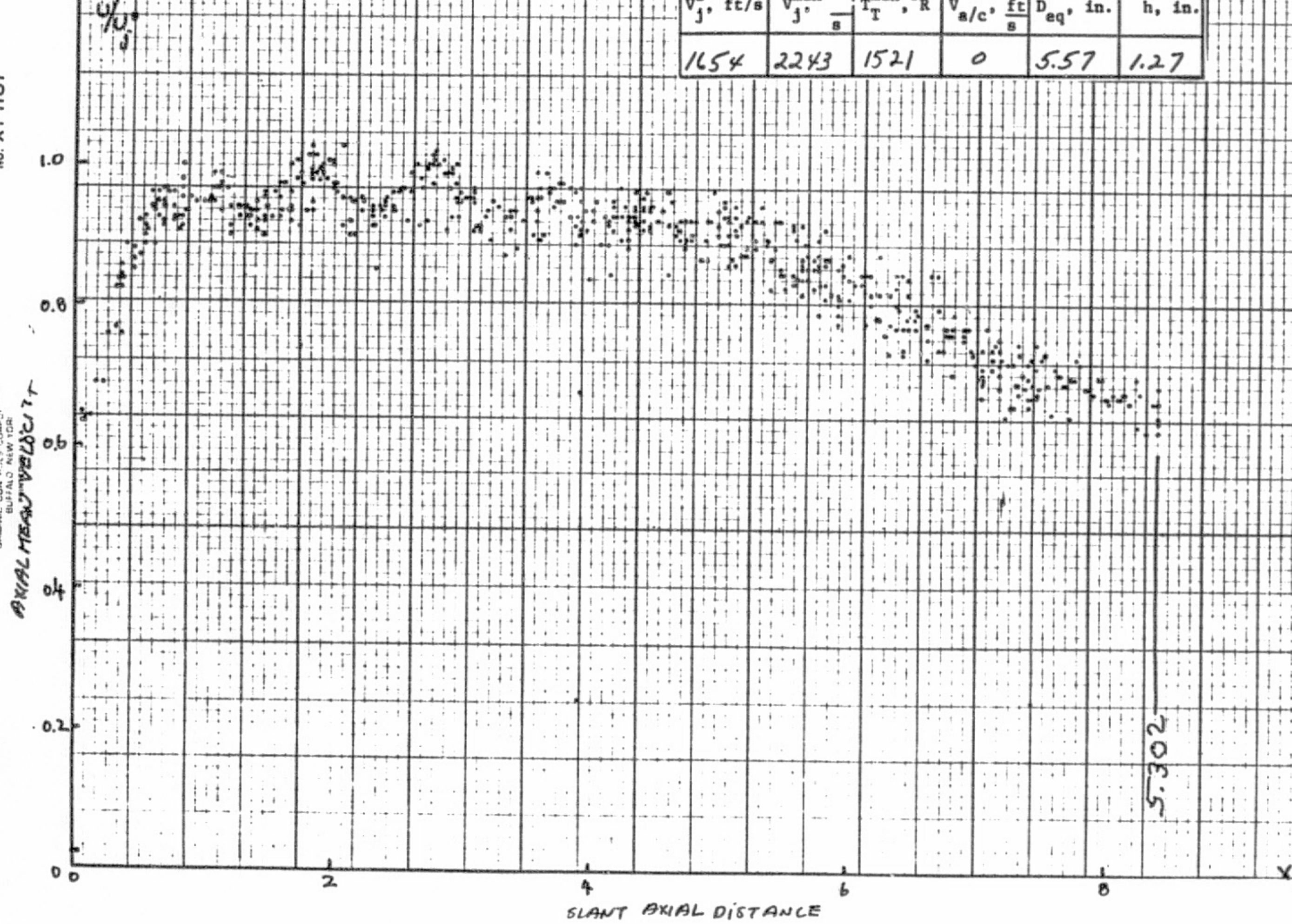
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
415	3.136	1692	2396	2.918	863
V_j^i, ft/s	V_j^{mix}, $\frac{}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1654	2243	1521	0	5.57	1.27





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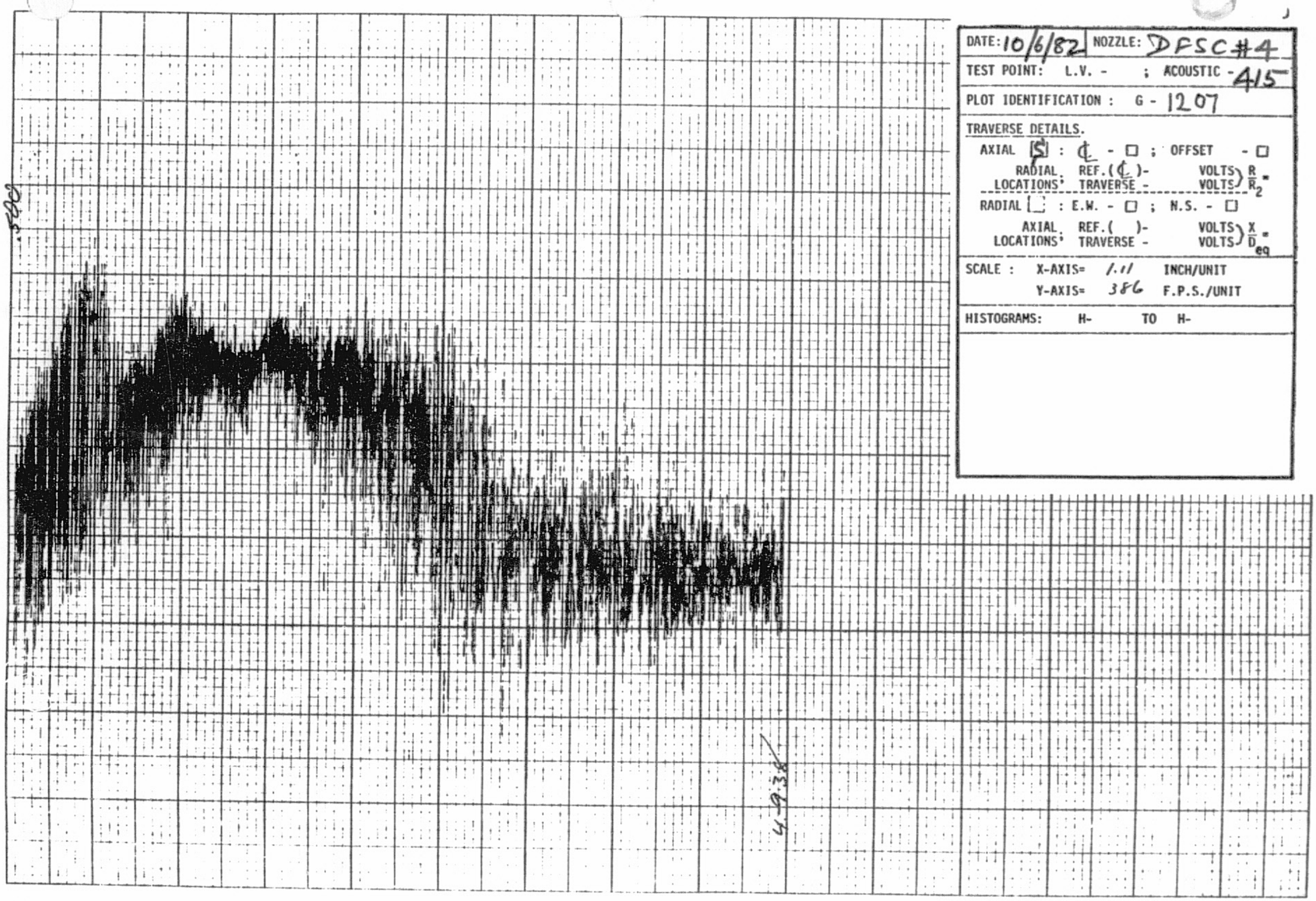

No. XY 1101

859

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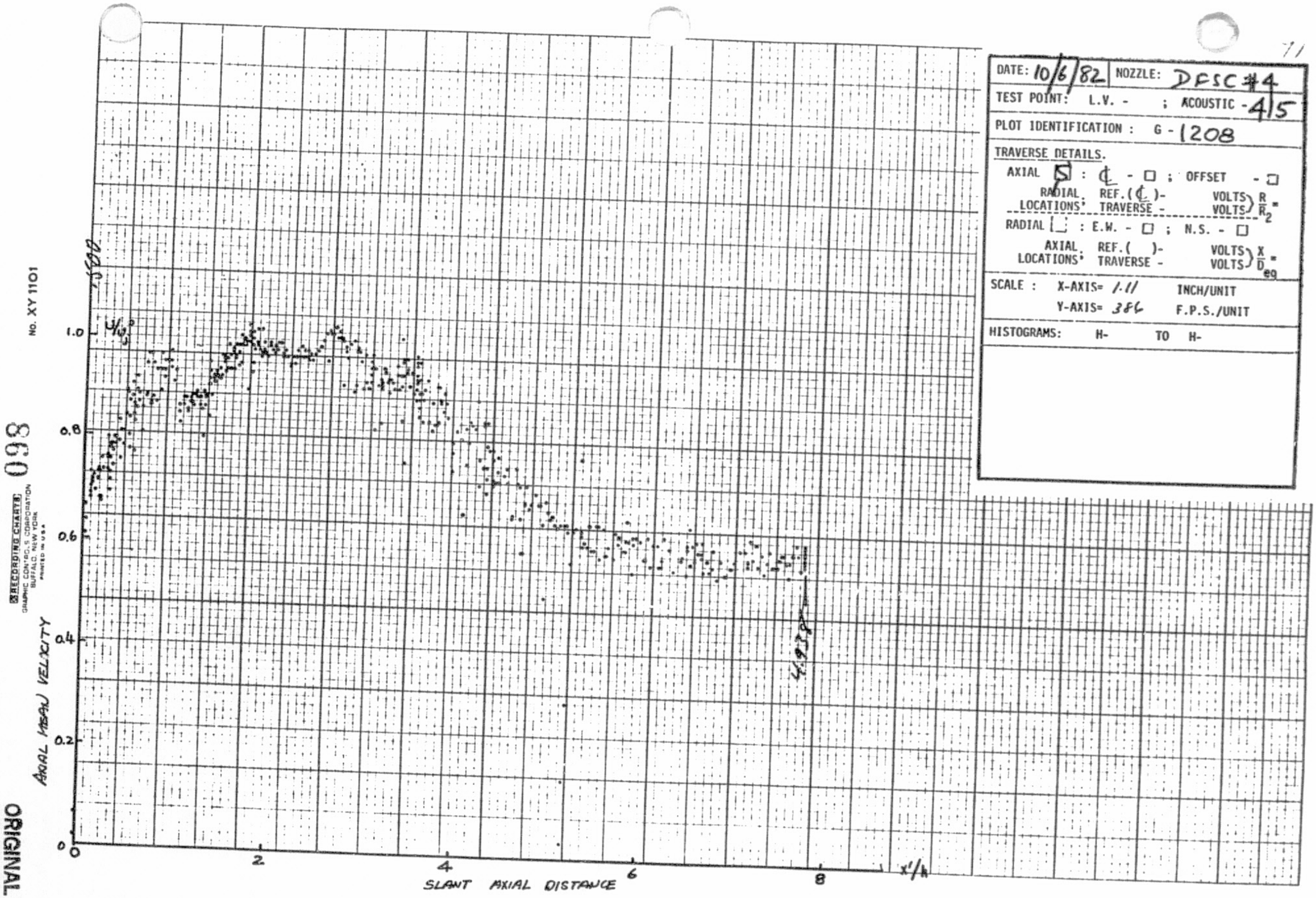


DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 415

PLOT IDENTIFICATION : G - 1208

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

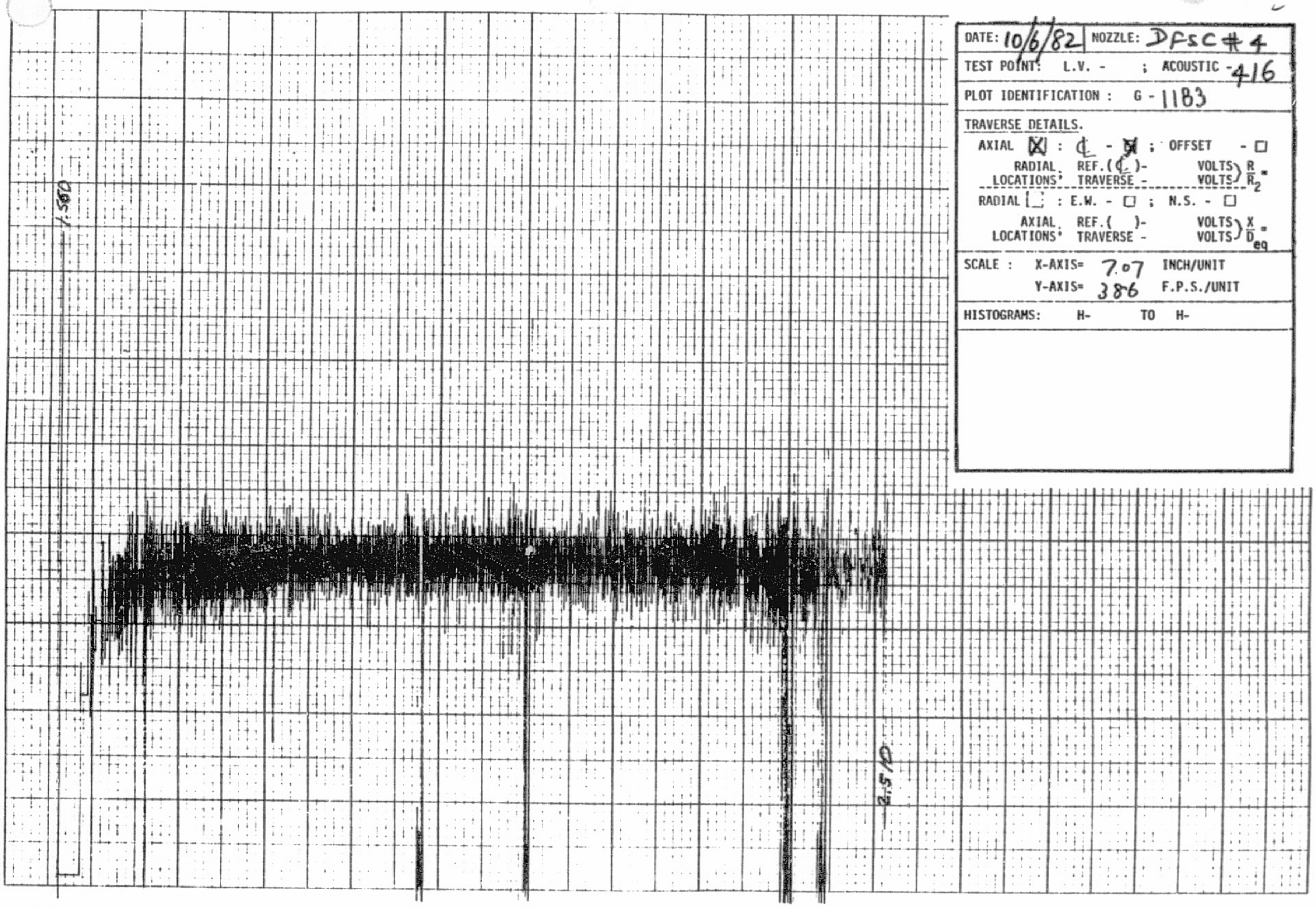
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 416

PLOT IDENTIFICATION : G - 1183

TRAVERSE DETAILS.

AXIAL [X] : ℄ - [X] ; OFFSET - [ ]

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - [ ] ; N.S. - [ ]

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.07 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

861

RECORDING CHARTS

DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 416

PLOT IDENTIFICATION : G - 1184

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.07 INCH/UNIT

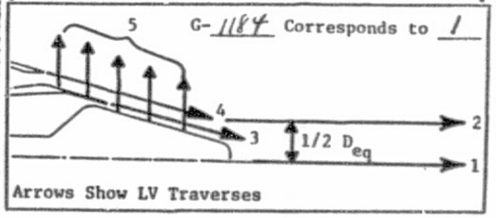
Y-AXIS= 386 F.P.S./UNIT

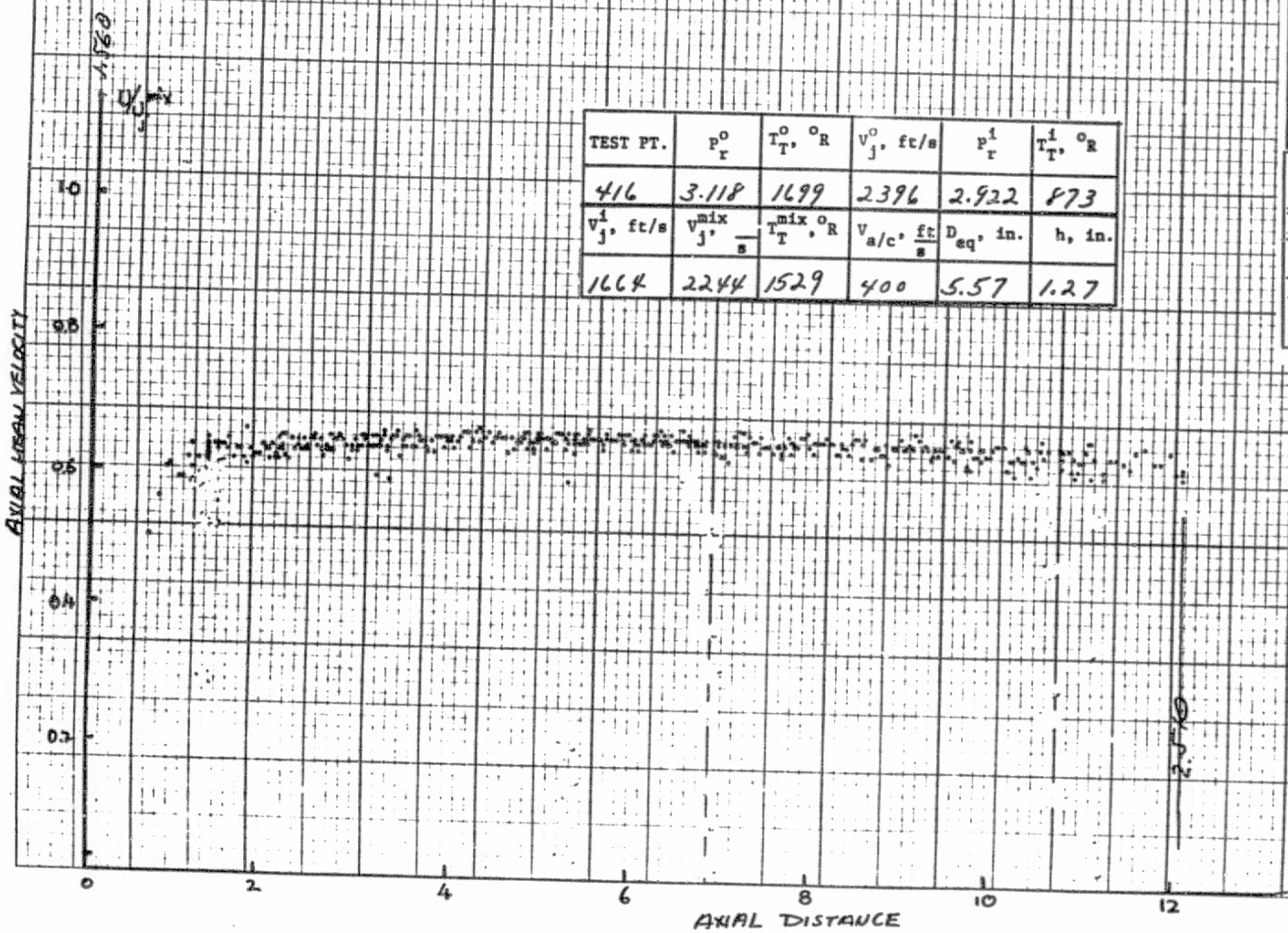
HISTOGRAMS: H- TO H-

G- 1184 Corresponds to 1

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
416	3.118	1699	2396	2.922	873
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1664	2244	1529	400	5.57	1.27





NO. XY 1101

862

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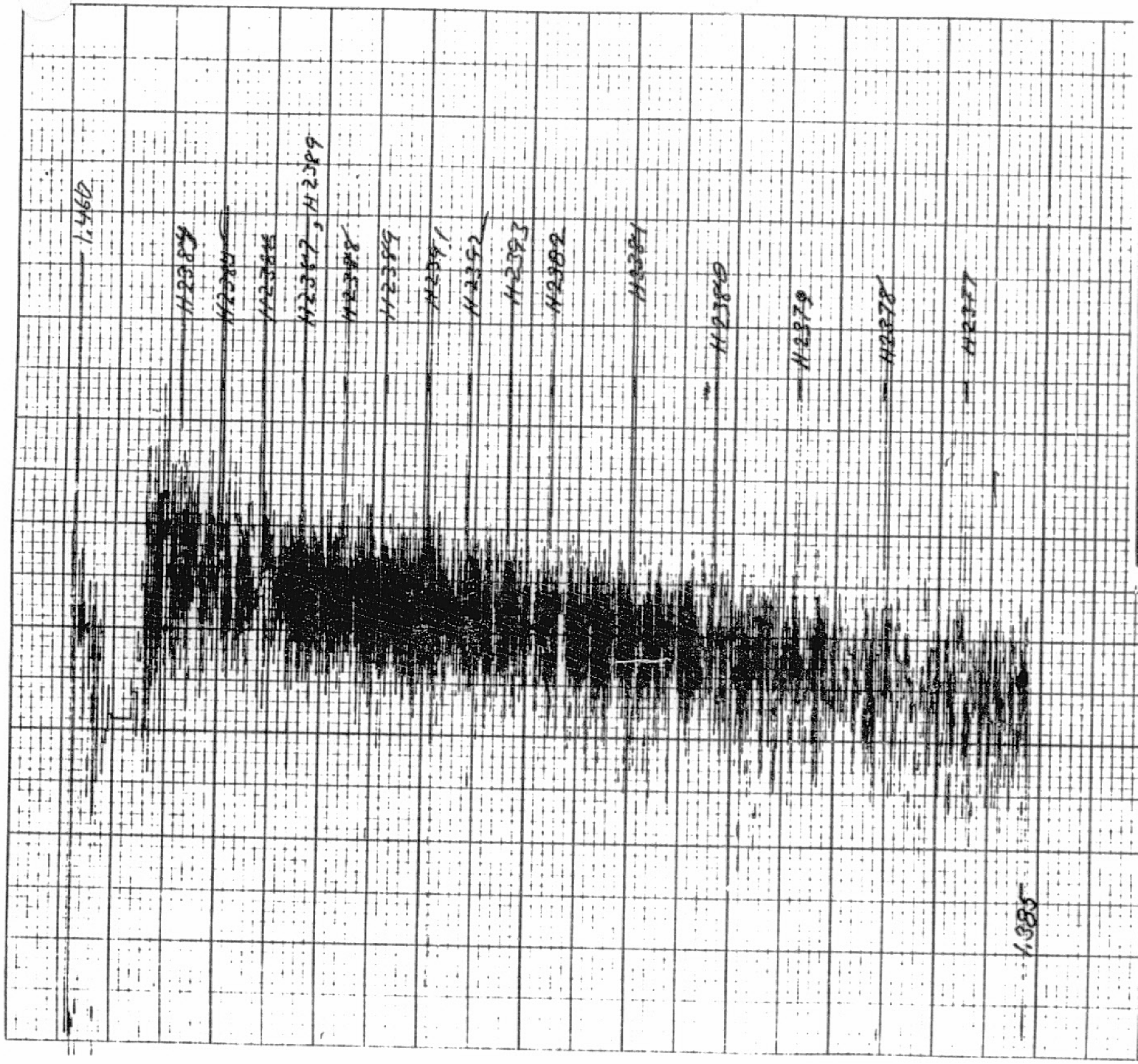

DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 416

PLOT IDENTIFICATION : G - 1185

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 7.07 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H-2377 TO H-2393

No. XY 1101

863

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DATE: 10/6/82 NOZZLE: DFSC#4

TEST POINT: L.V. - ; ACOUSTIC - 416

PLOT IDENTIFICATION : G - 1186

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

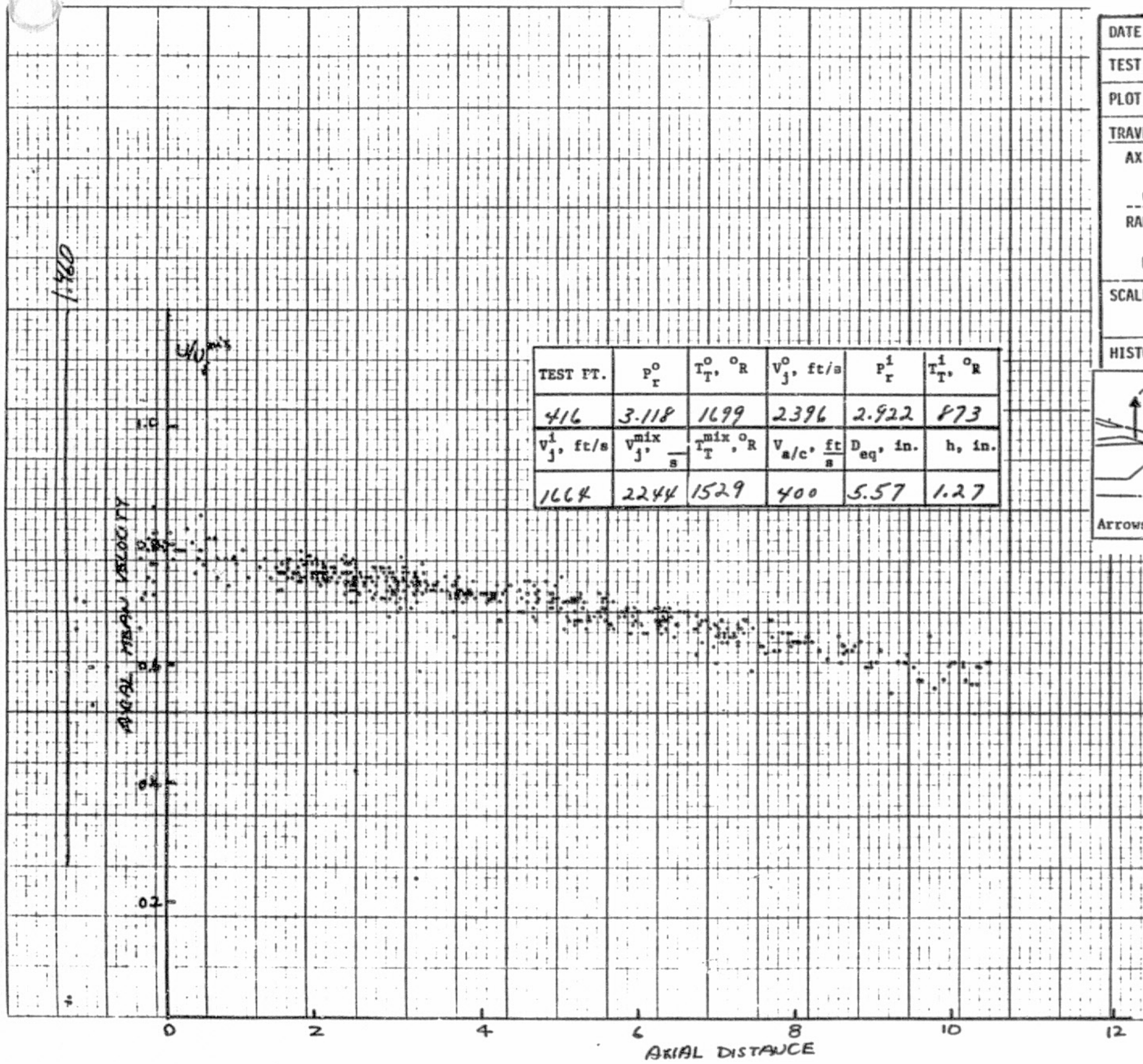
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.07 INCH/UNIT

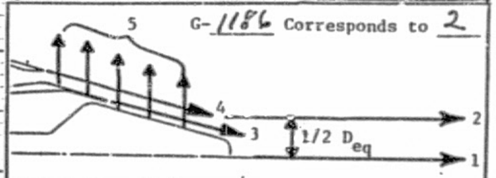
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
416	3.118	1699	2396	2.922	873
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1664	2244	1529	400	5.57	1.27



G-1186 Corresponds to 2

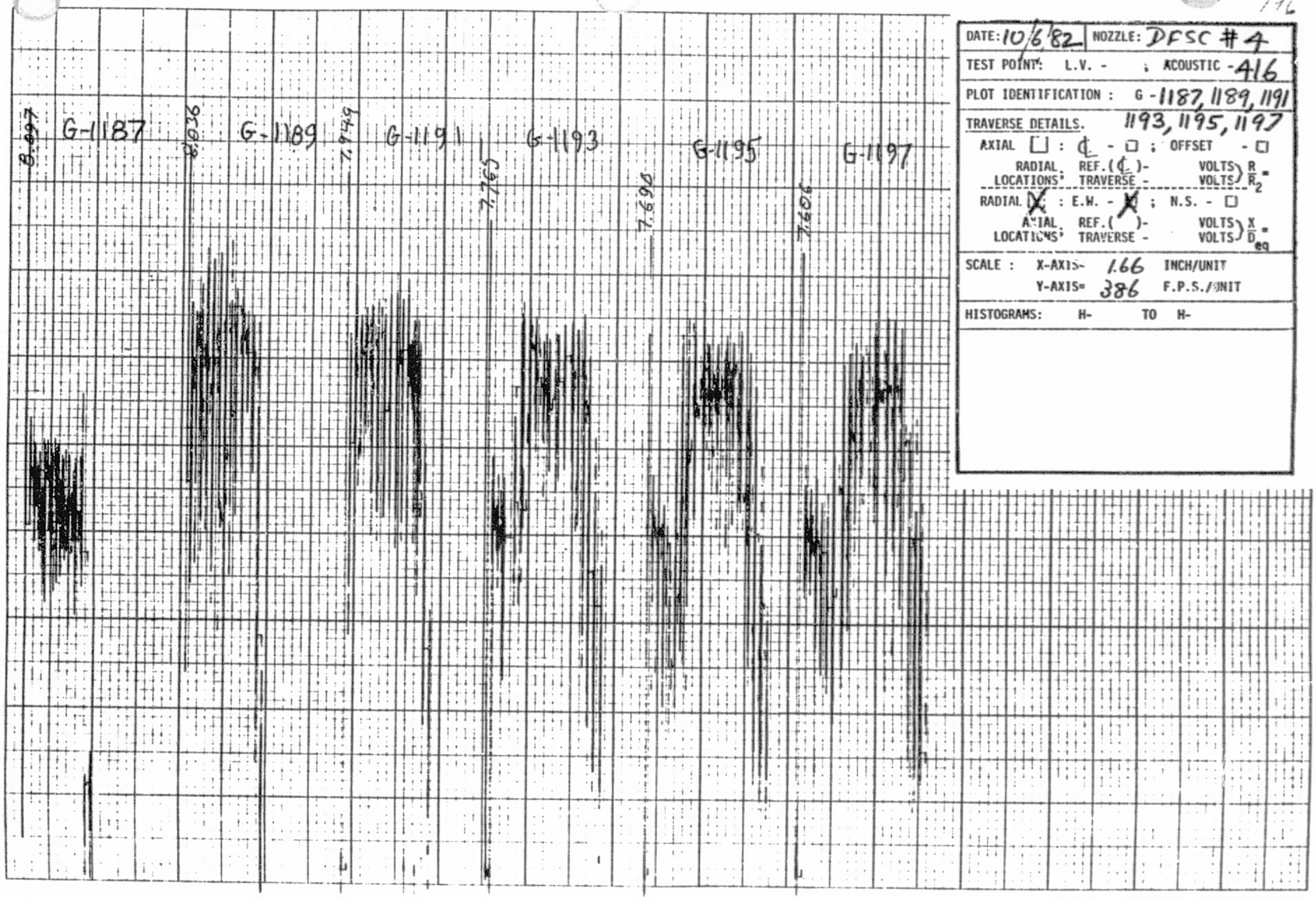


Arrows Show LV Traverses

No. XY 1101

864

116



DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 416

PLOT IDENTIFICATION : G - 1187, 1189, 1191, 1193, 1195, 1197

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS ; $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS ; $\frac{X}{D_{eq}}$ =

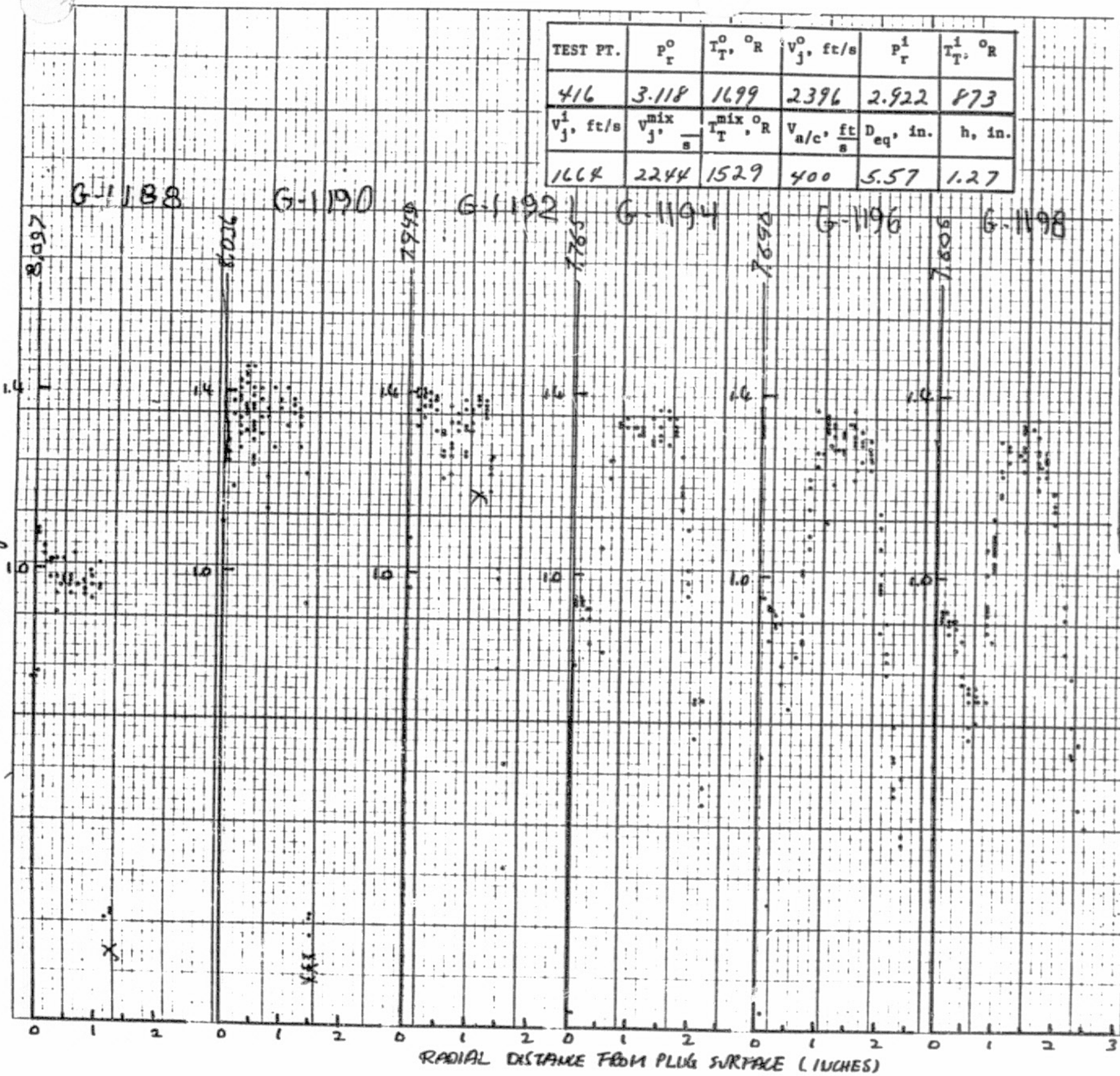
SCALE : X-AXIS = 1.66 INCH/UNIT

Y-AXIS = 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

865

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
416	3.118	1699	2396	2.922	873
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1664	2244	1529	400	5.57	1.27



DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 416

PLOT IDENTIFICATION : G - 1188, 1190, 1192, 1194, 1196, 1198

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

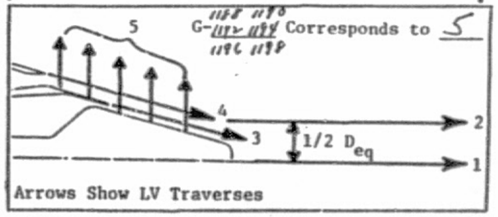
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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866

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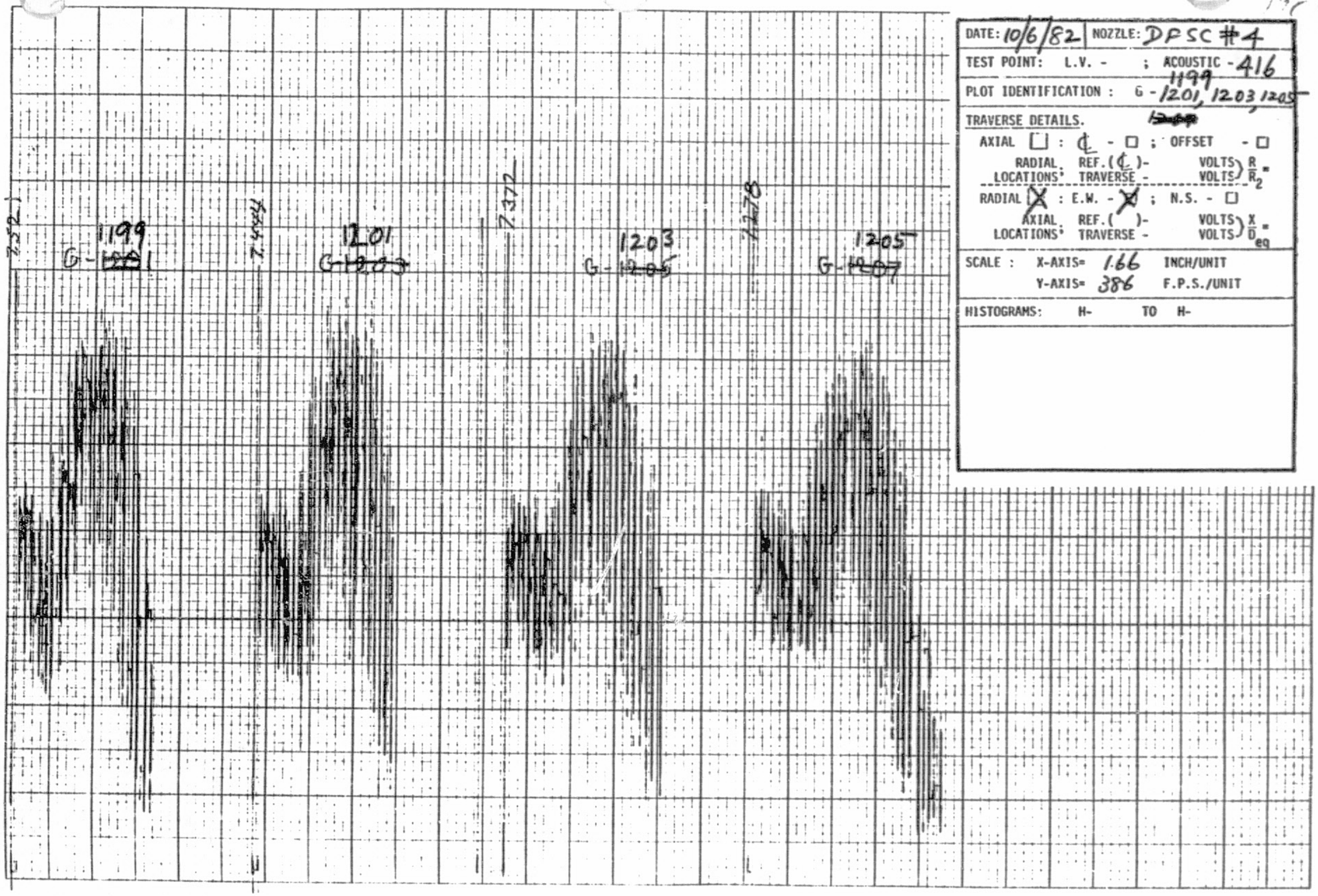

DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 416

PLOT IDENTIFICATION : G - 1199, 1201, 1203, 1205

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS } $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS } $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

867

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NO. XY 1101

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
416	3.118	1699	2396	2.922	873
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1664	2244	1529	400	5.57	1.27

DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 416

PLOT IDENTIFICATION : G - 1200, 1202, 1204, 1206, ~~1208~~

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

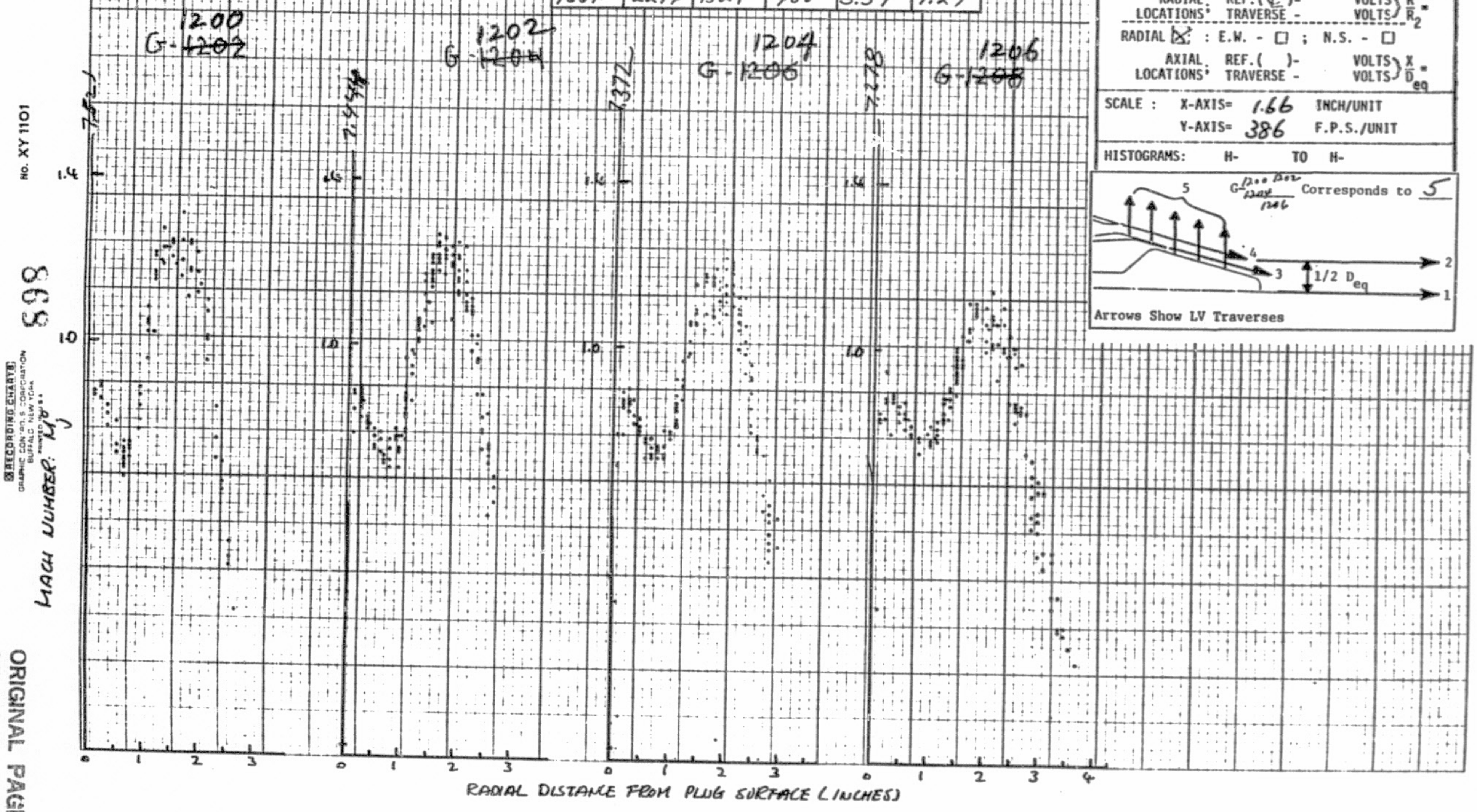
RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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868

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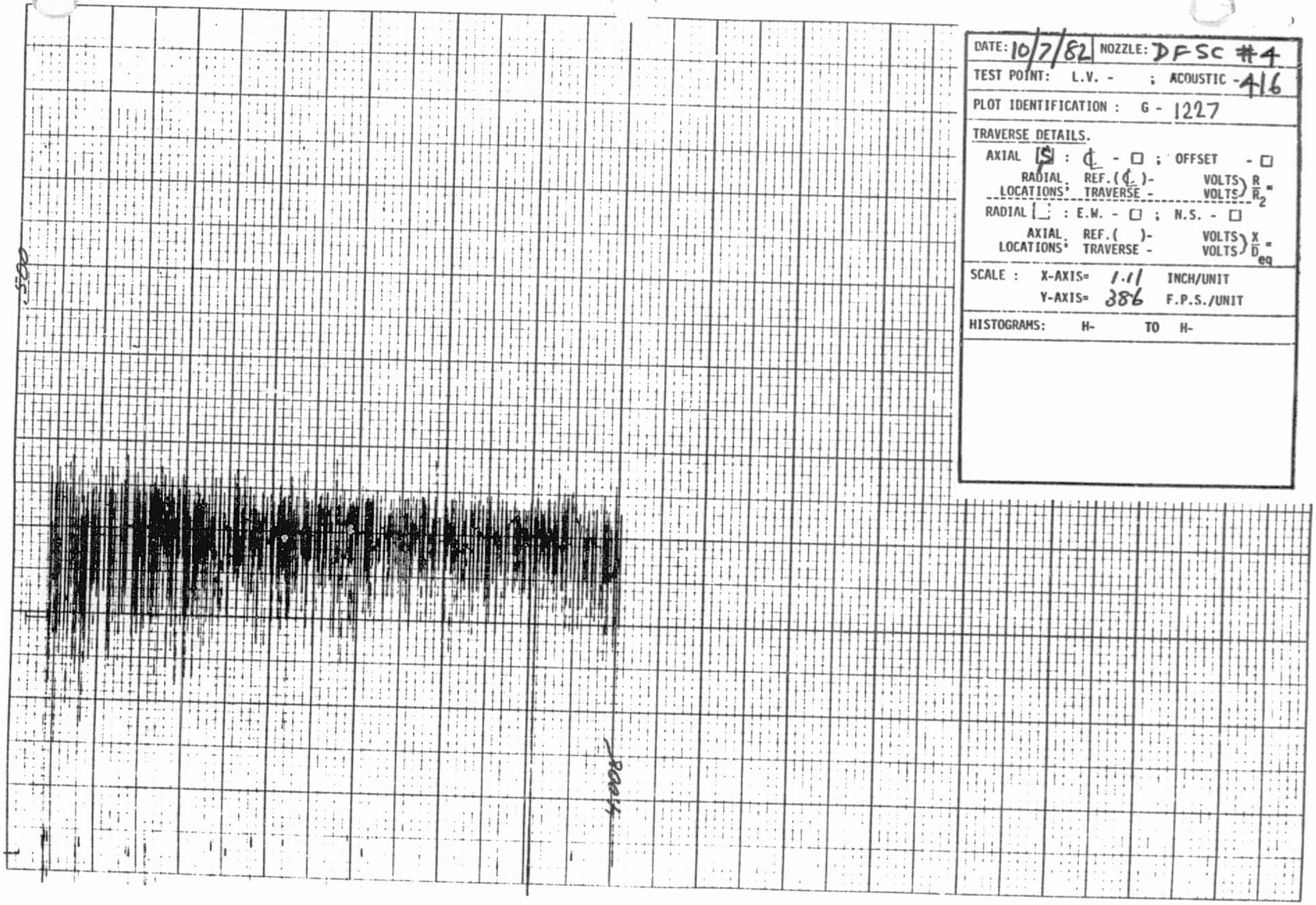

DATE: 10/7/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 416	
PLOT IDENTIFICATION : G - 1227	

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

863

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BUFFALO, NEW YORK

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DATE: 10/7/82	NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 416

PLOT IDENTIFICATION : G - 1228

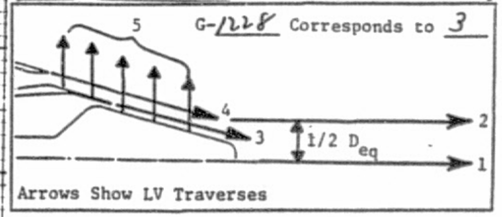
TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐
RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

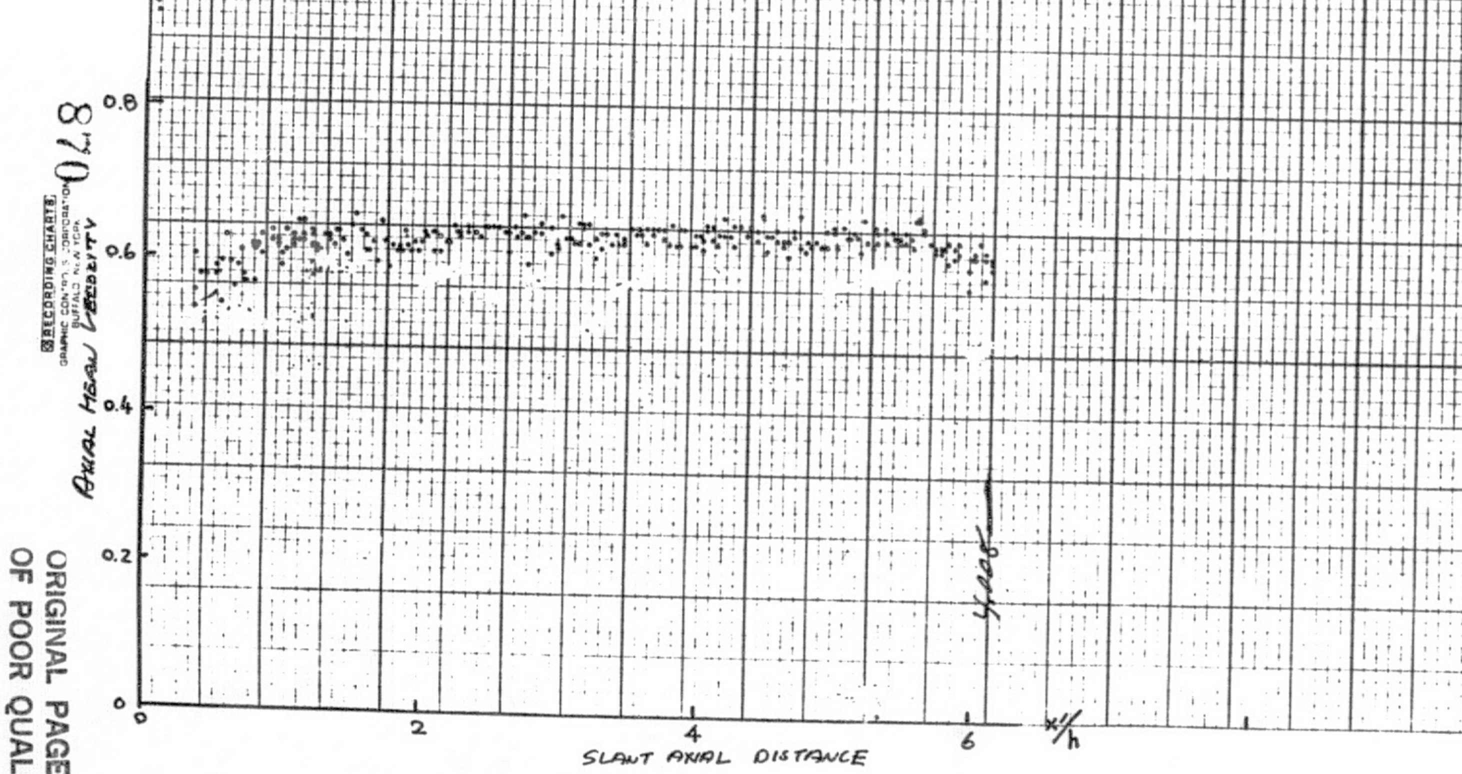
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

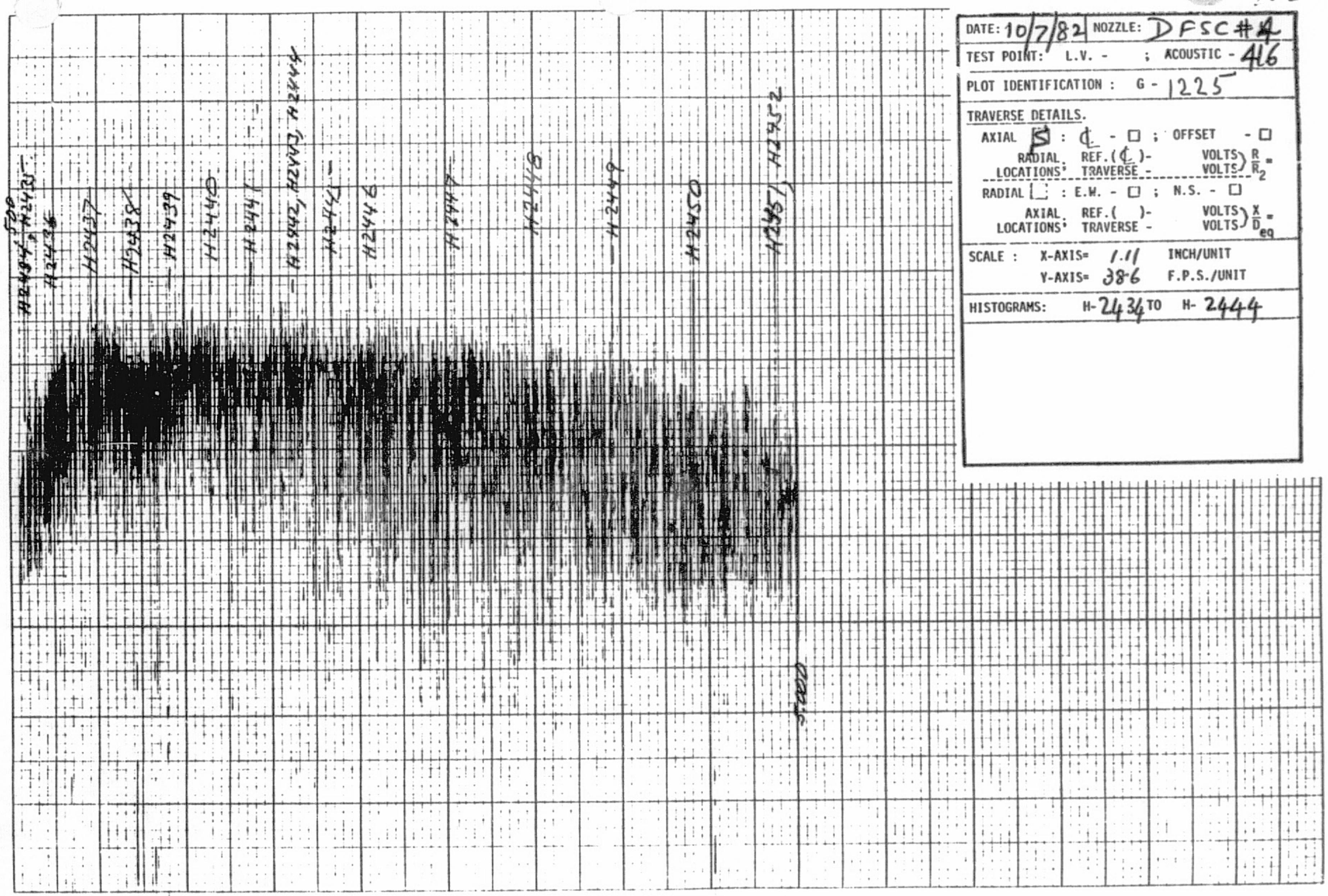
SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
416	3.118	1699	2396	2.922	873
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1664	2244	1529	400	5.57	1.27





DATE: 10/7/82 NOZZLE: DFSC#4

TEST POINT: L.V. - ; ACOUSTIC - 416

PLOT IDENTIFICATION : G - 1225

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS; REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 38.6 F.P.S./UNIT

HISTOGRAMS: H-2434 TO H-2444

NO. XY 1101

871

DATE: 10/7/82	NOZZLE: DPSC#4
TEST POINT: L.V. - ; ACOUSTIC - 416	
PLOT IDENTIFICATION : G - 1226	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

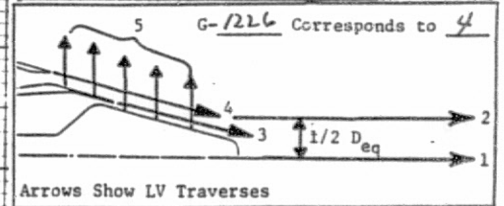
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

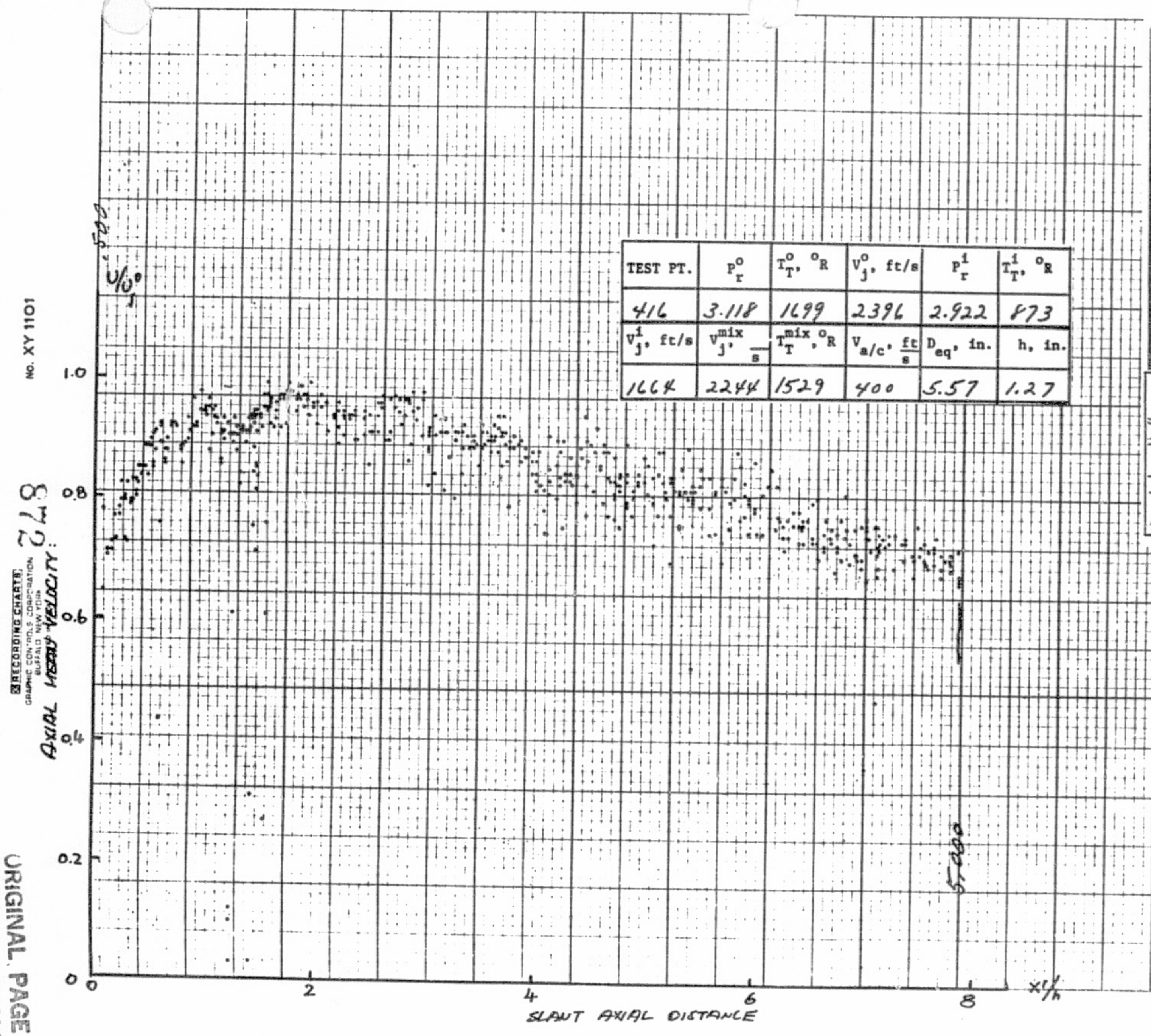
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
416	3.118	1699	2396	2.922	873
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1664	2244	1529	400	5.57	1.27



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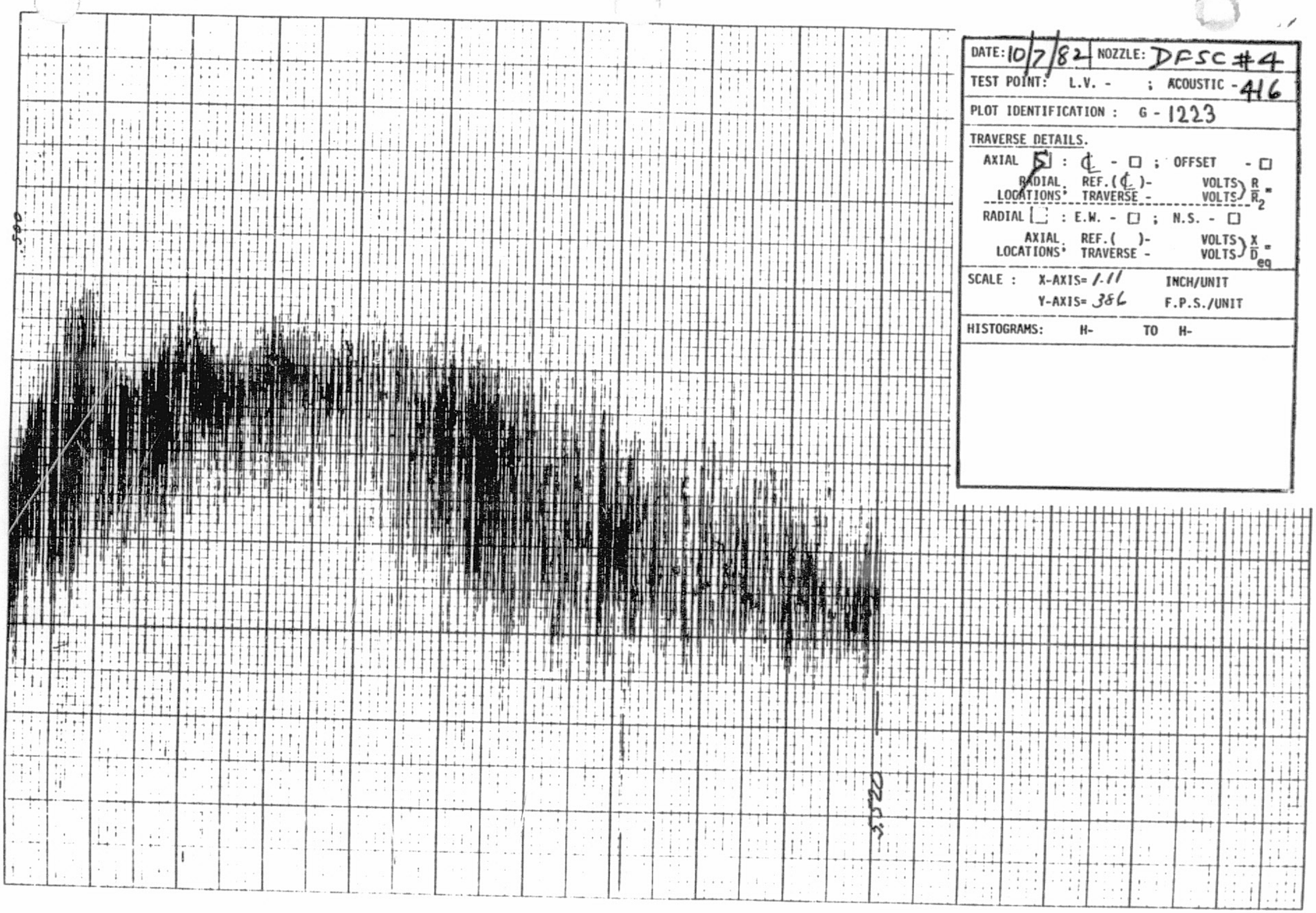

NO. XY 1101

873

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DATE: 10/7/82	NOZZLE: DFSC #4		
TEST POINT:	L.V. -	; ACOUSTIC - 416	
PLOT IDENTIFICATION :	G - 1224		

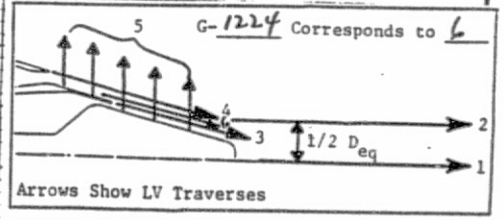
TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

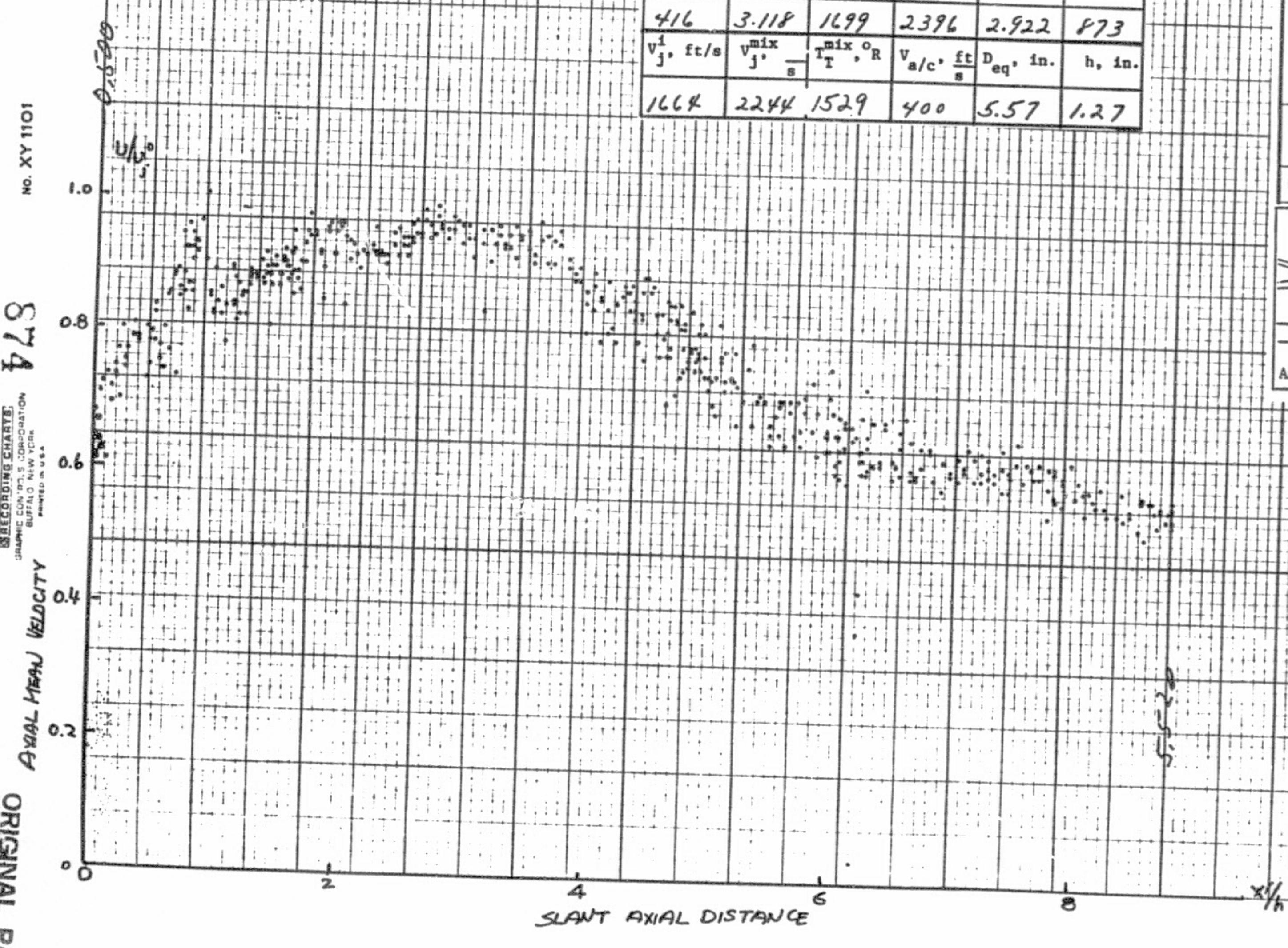
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
416	3.118	1699	2396	2.922	873
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1664	2244	1529	400	5.57	1.27



874

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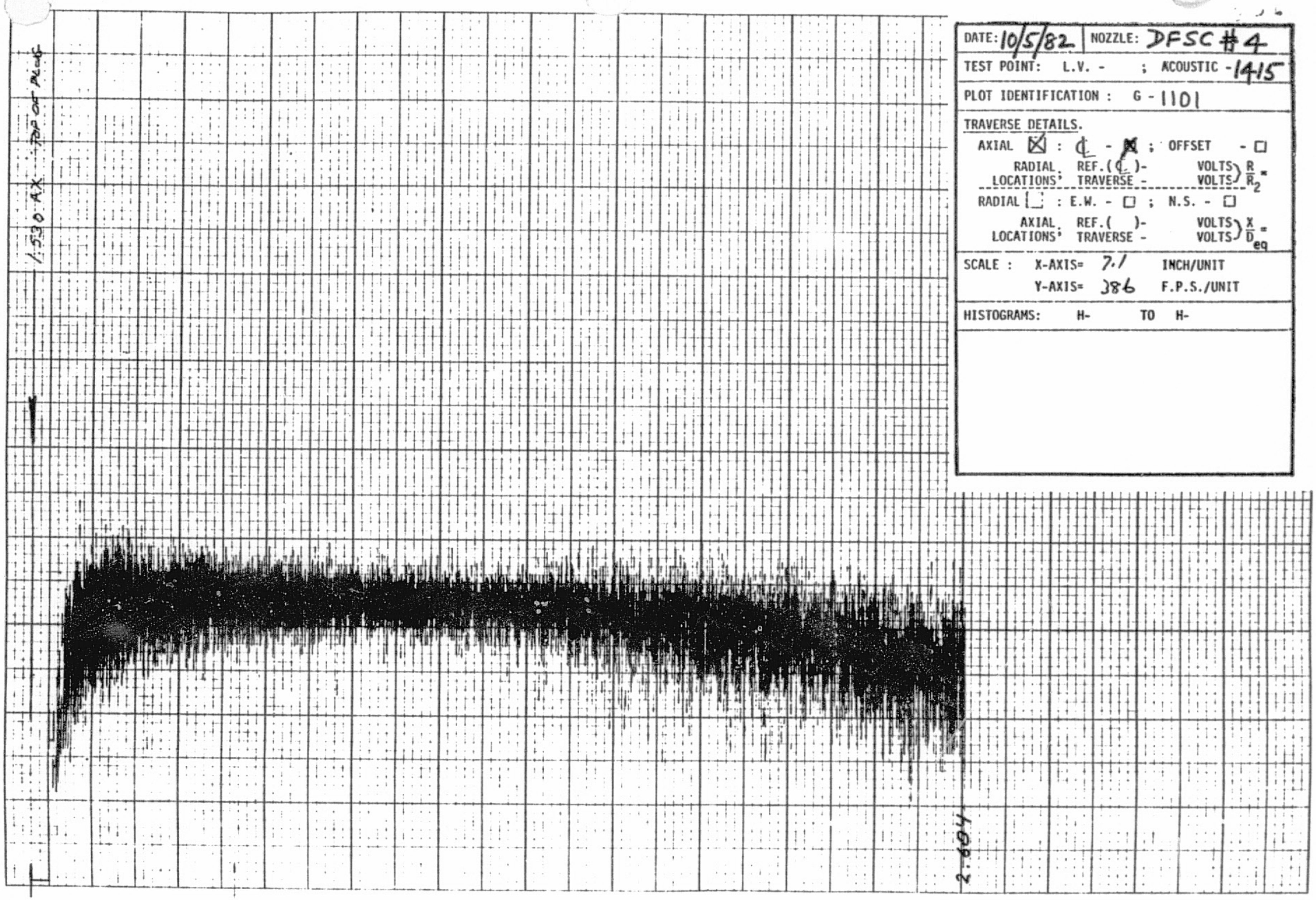

DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1415

PLOT IDENTIFICATION : G - 1101

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

875

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DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC -1415

PLOT IDENTIFICATION : G - 1102

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS } $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

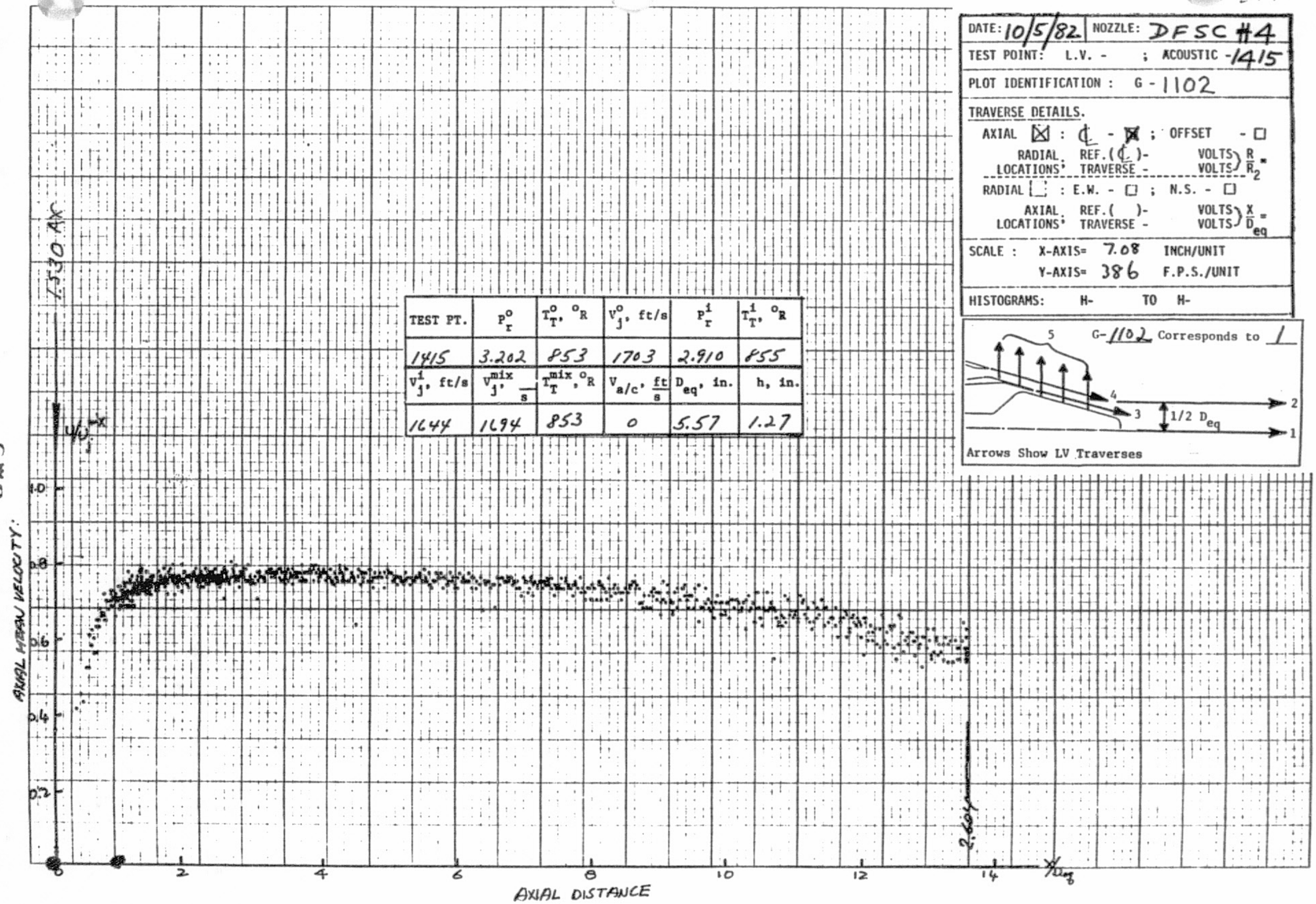
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS } $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1415	3.202	853	1703	2.910	855
V_j^i, ft/s	V_j^{mix}, $\frac{}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1644	1694	853	0	5.57	1.27



NO. XY 1101

876

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DATE: 10/5/82 | NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1415

PLOT IDENTIFICATION : G - 1103

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

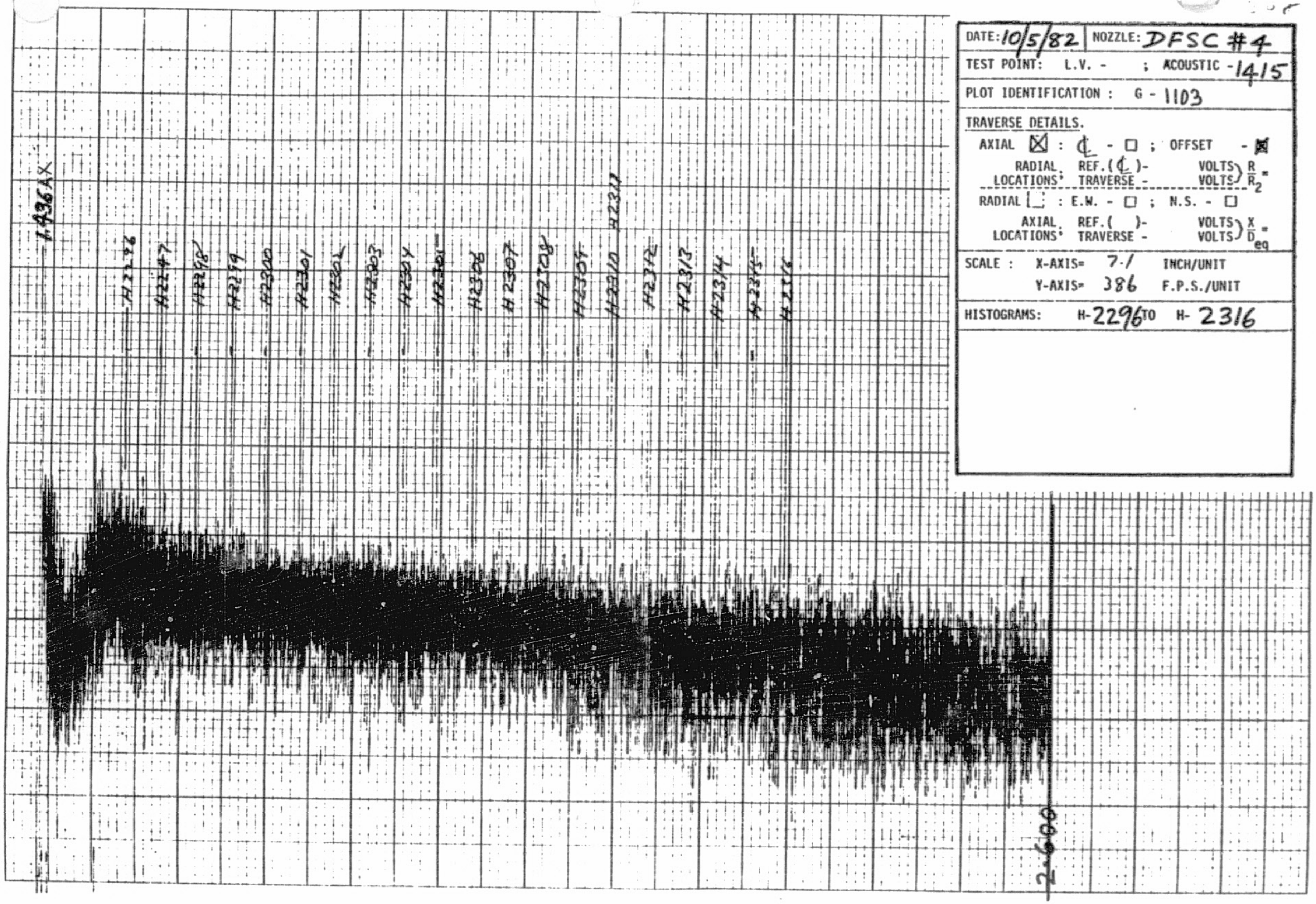
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H-2296 TO H-2316



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DATE: 10/5/82 NOZZLE: DFSC#4

TEST POINT: L.V. - ; ACOUSTIC - 1415

PLOT IDENTIFICATION : G - 1104

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF (℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

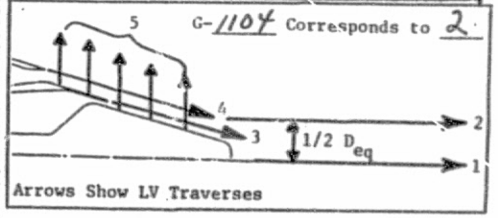
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

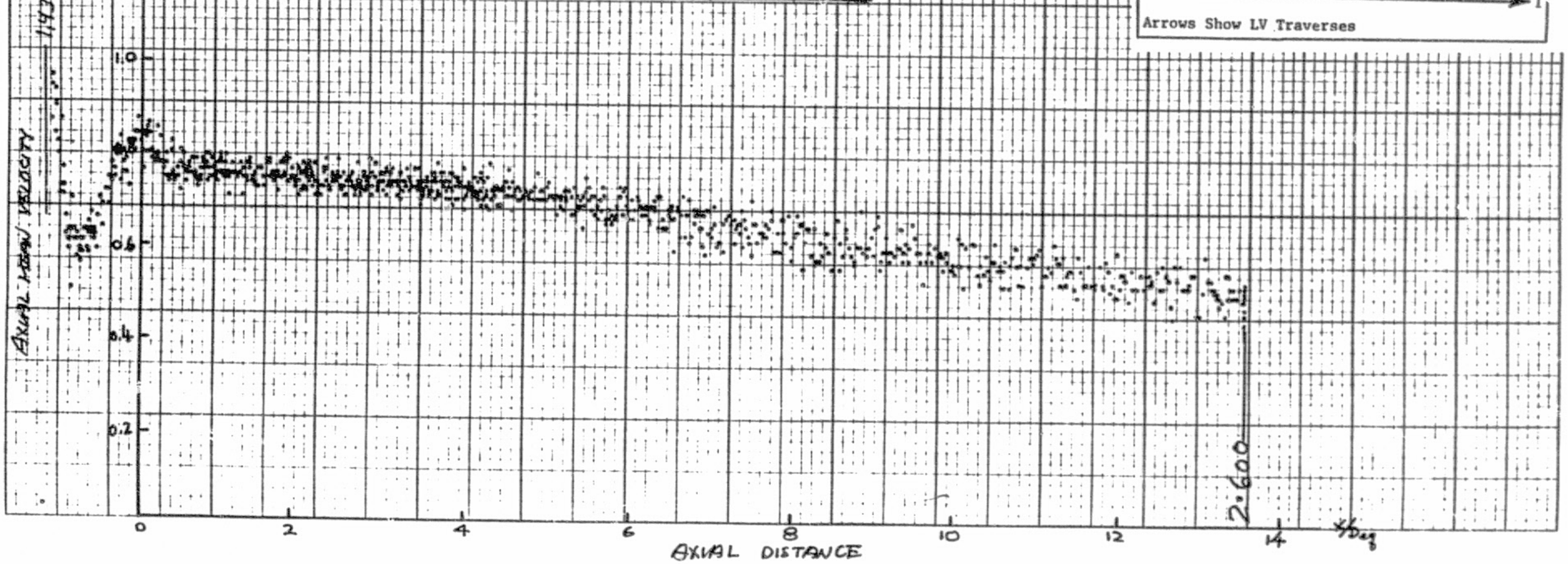
SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1415	3.202	853	1703	2.910	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1644	1694	853	0	5.57	1.27



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878

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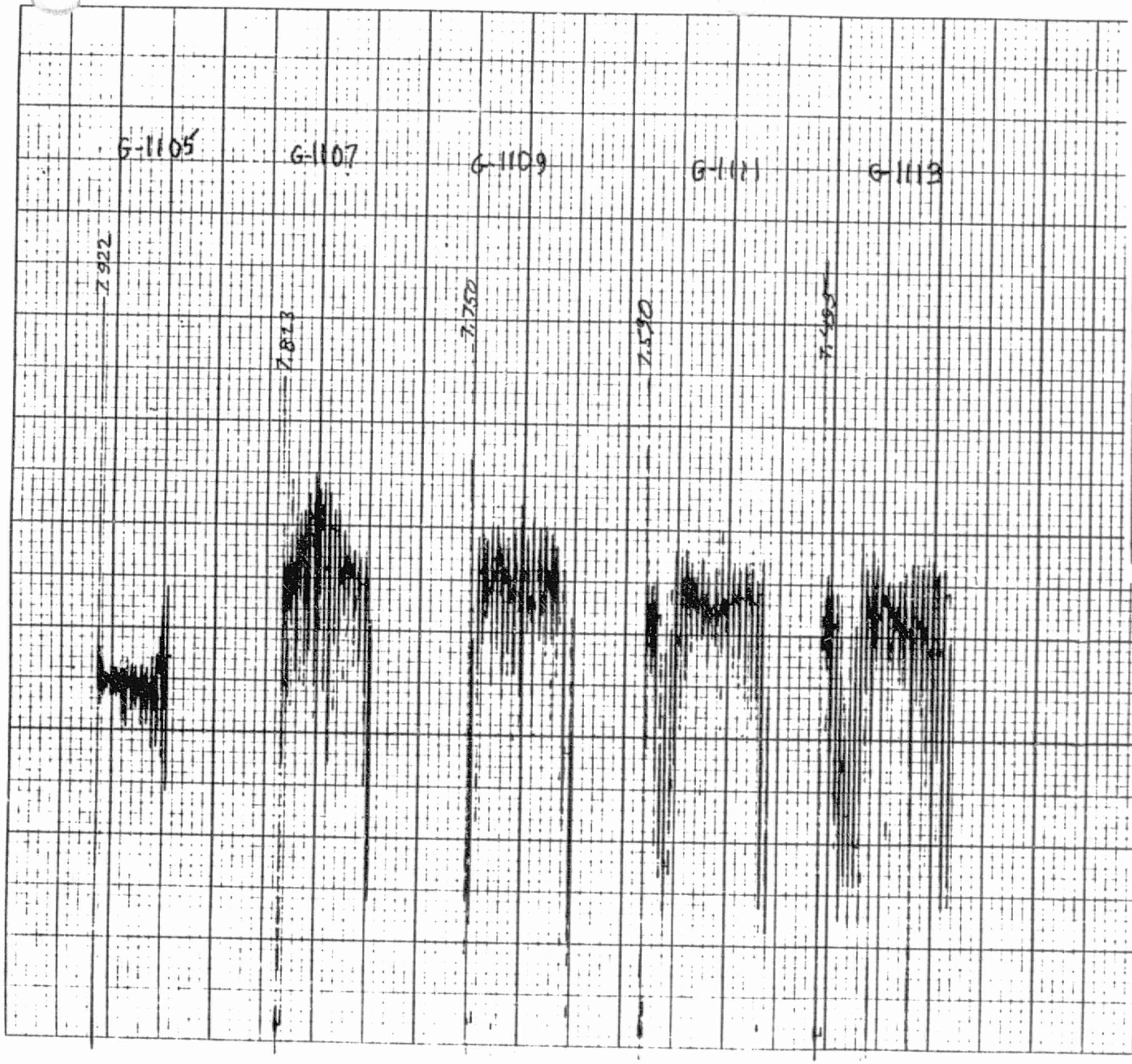

DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 14-15

PLOT IDENTIFICATION : G -1105, 1107, 1109, 1111, 1113

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

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DATE: 10/5/82	NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1415

PLOT IDENTIFICATION : G - 1106, 1108, 1110, 1112, 1114

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

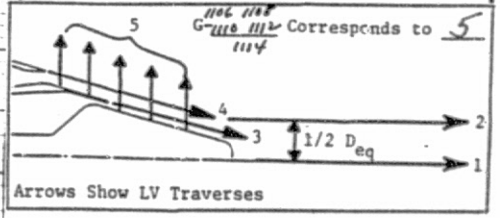
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

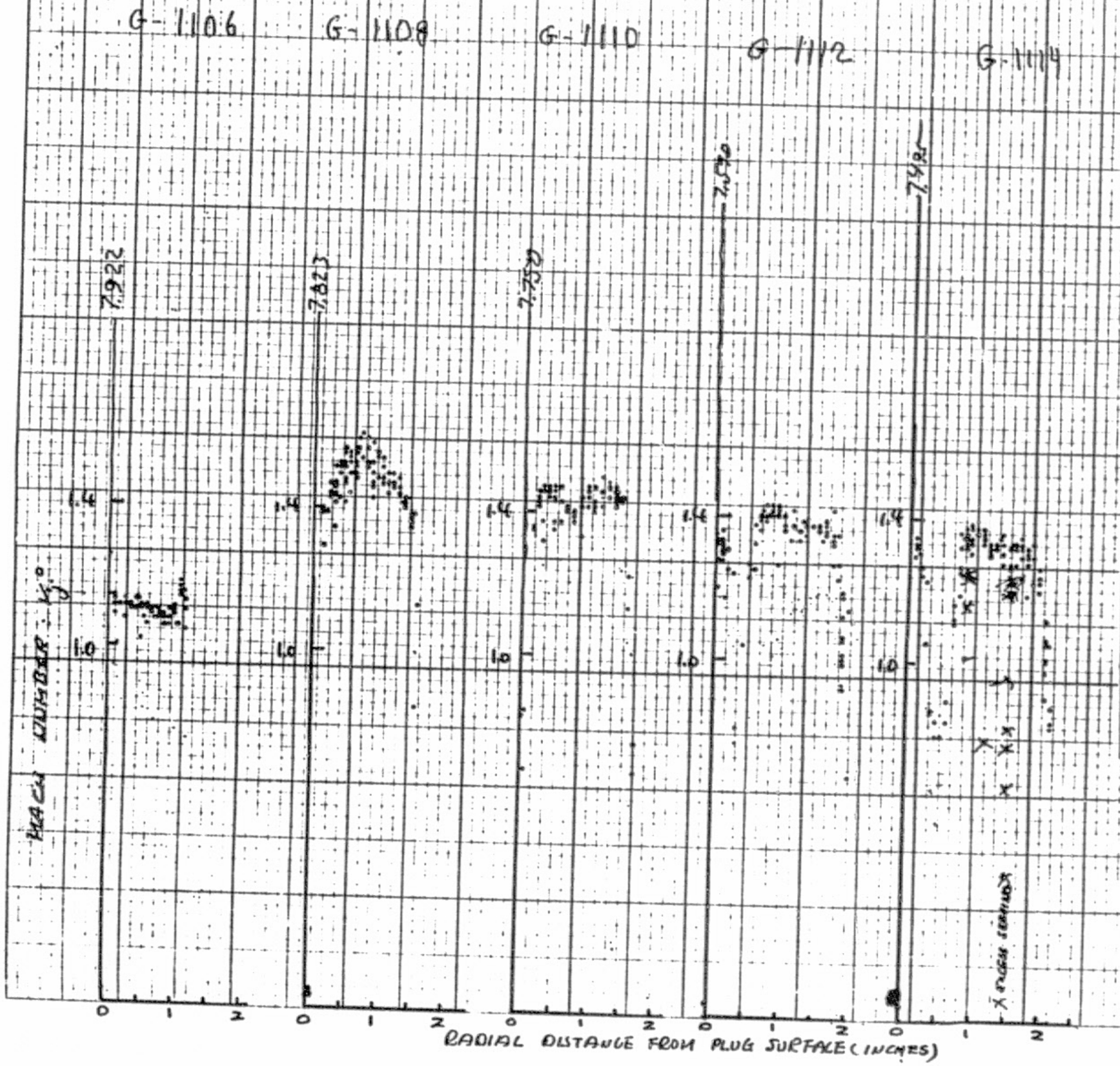
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-





TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1415	3.202	853	1703	2.910	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1644	1694	853	0	5.57	1.27

NO. XY 1101

080

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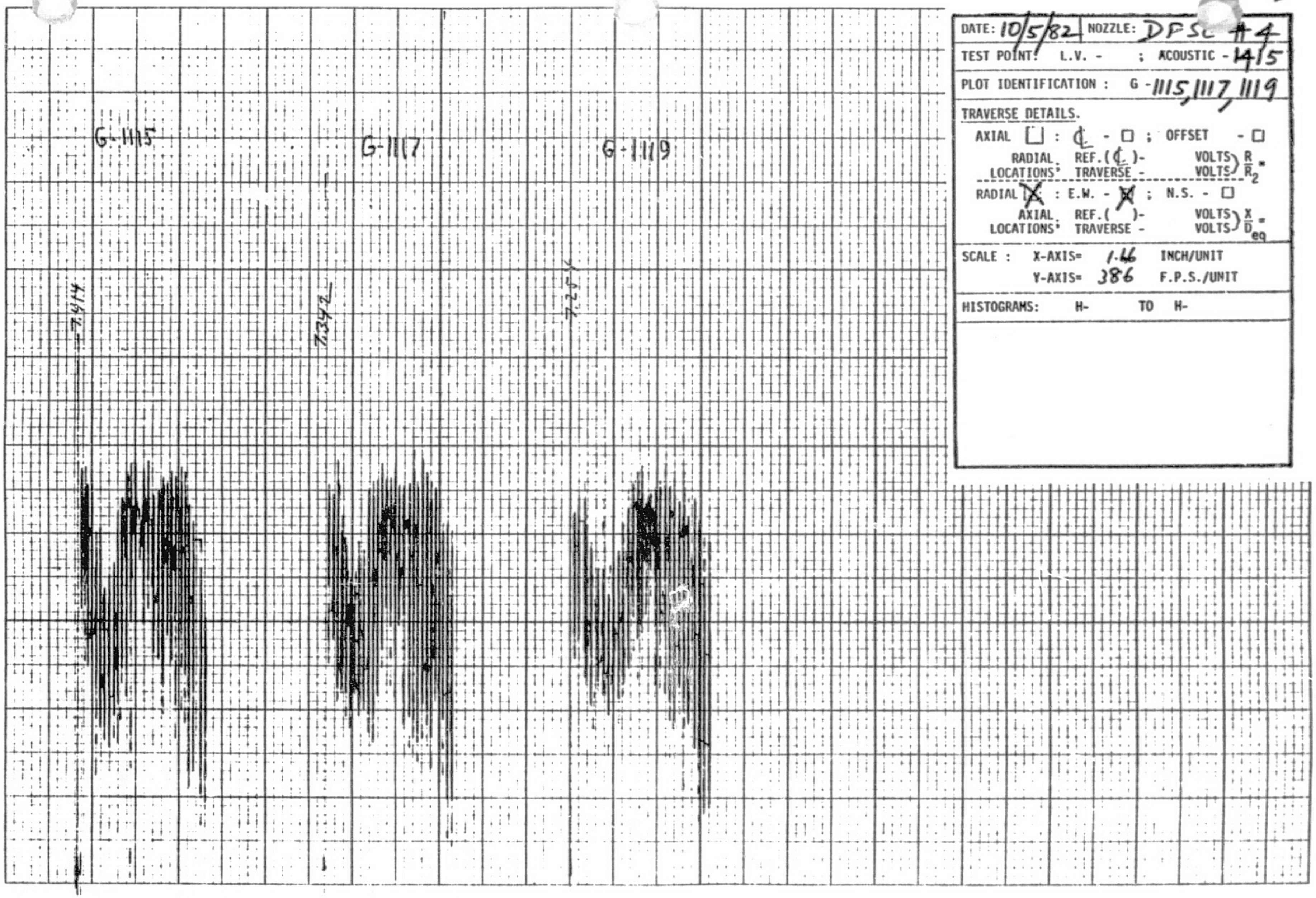

DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1415

PLOT IDENTIFICATION : G - 1115, 1117, 1119

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS } R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS } X/D_{eq} =

SCALE : X-AXIS= 1.46 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

881

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

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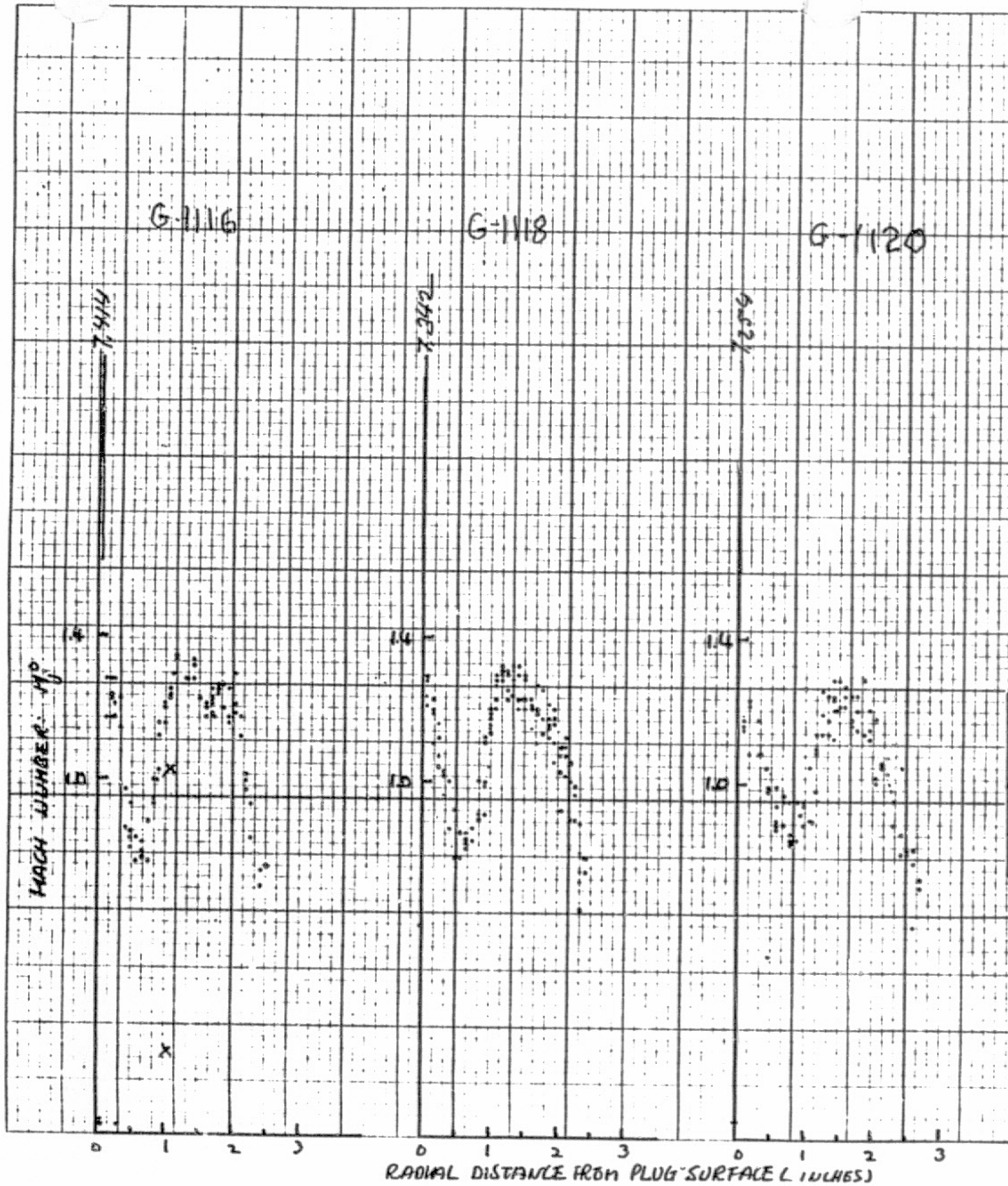


DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1415

PLOT IDENTIFICATION : G - 1116, 1118, 1120

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS) VOLTS) $\frac{R}{R_2}$ =

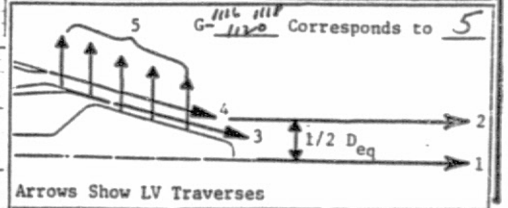
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS) VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

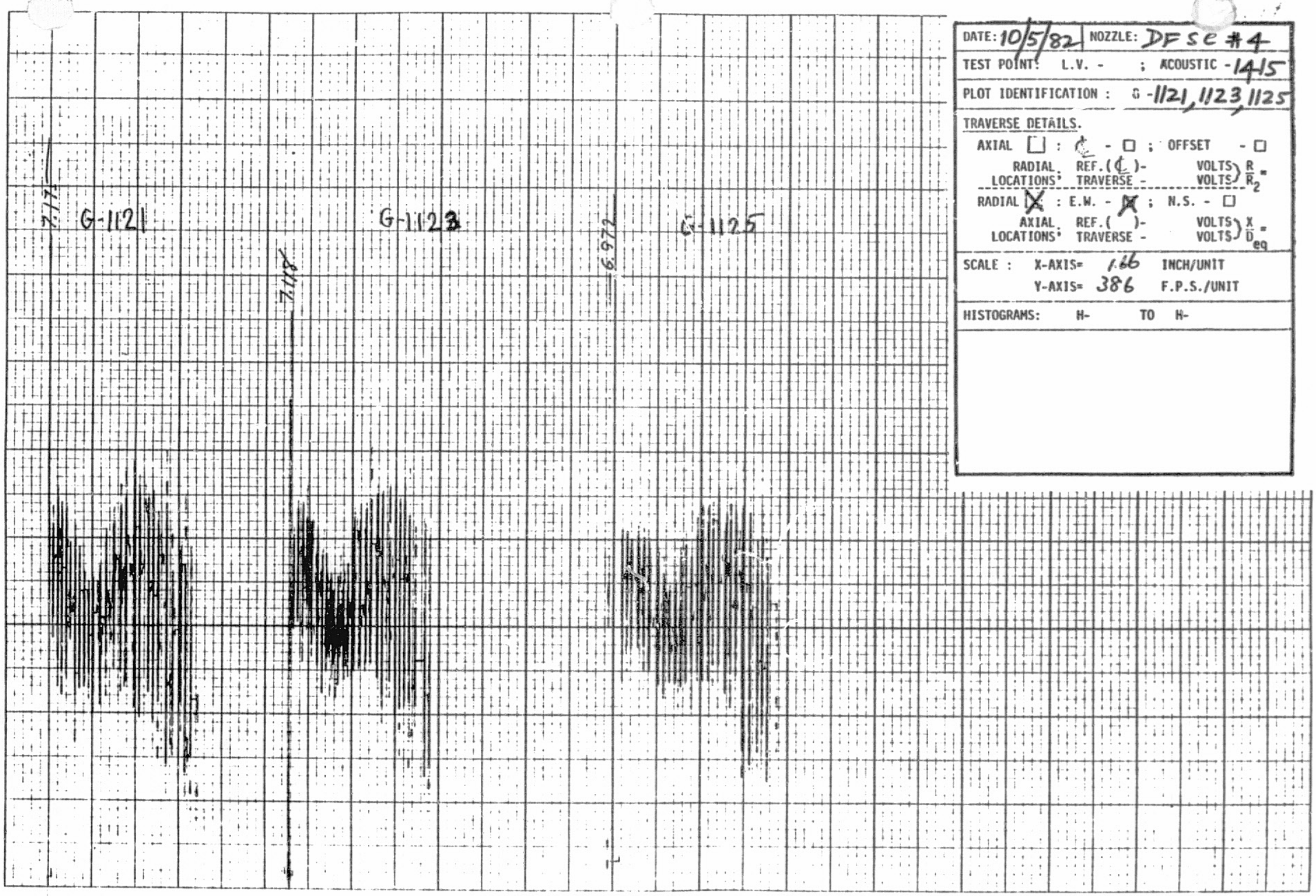
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1415	3.202	853	1703	2.910	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1644	1694	853	0	5.57	1.27

882



DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1415

PLOT IDENTIFICATION : G-1121, 1123, 1125

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

883

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK PRINTED IN U.S.A.

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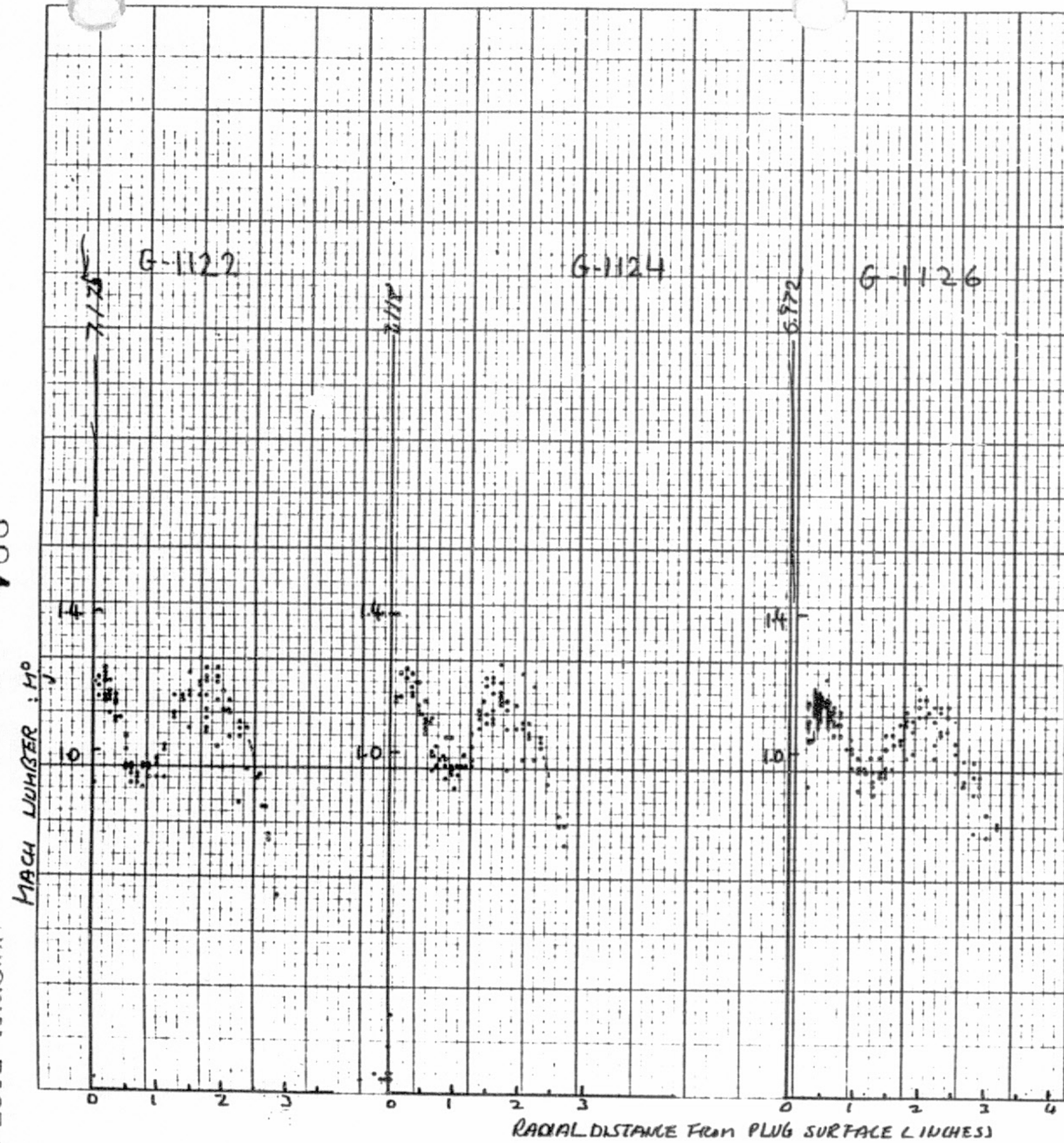
884



DATE: 10/5/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1415

PLOT IDENTIFICATION : G - 1122, 1124, 1126

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS) $\frac{R}{R_2}$ =

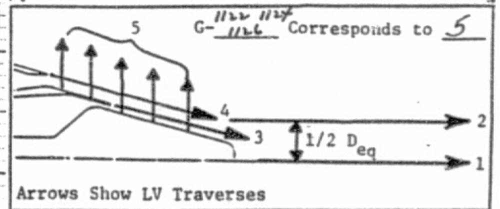
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1415	3.202	853	1703	2.910	855
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1644	1694	853	0	5.57	1.27

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DATE: 10/7/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 1415	
PLOT IDENTIFICATION : G - 1215	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\} \frac{R}{R_2}=$

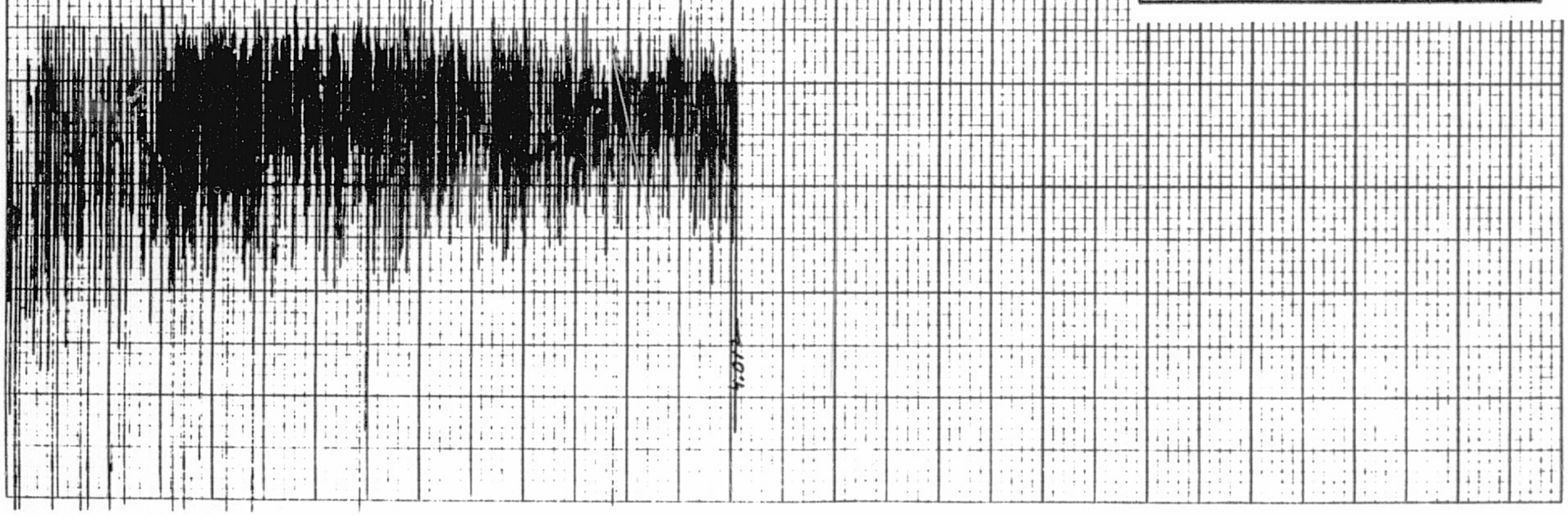
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $\} \frac{X}{D_{eq}}=$

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



885

DATE: 10/7/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1415

PLOT IDENTIFICATION : G - 1216

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

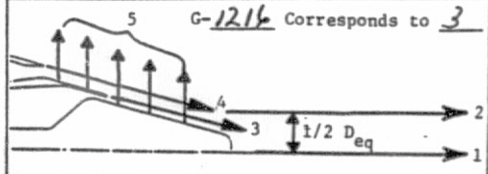
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

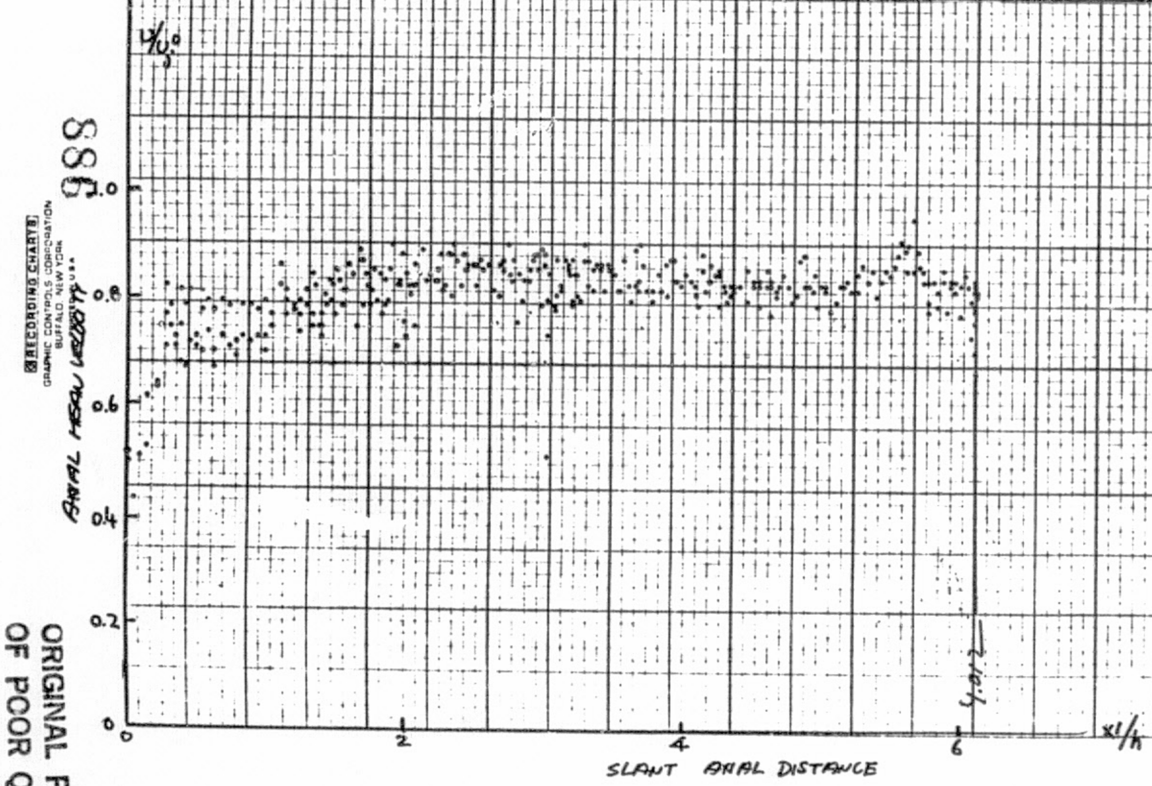
HISTOGRAMS: H- TO H-



G-1216 Corresponds to 3

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1415	3.202	853	1703	2.910	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1644	1694	853	0	5.57	1.27

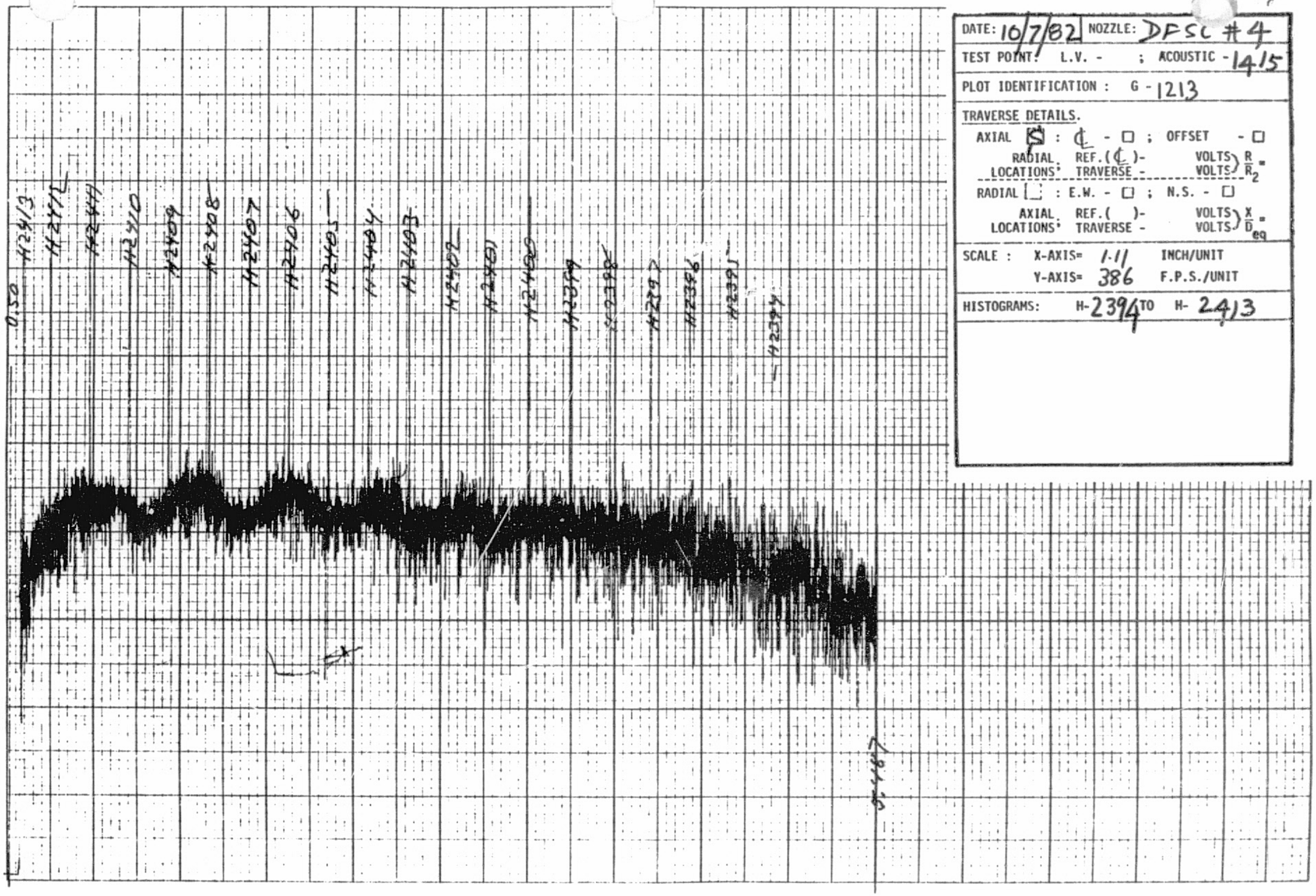


886

NO. XY 1101

CLEARPOOL RECORDING CHARTS
GRAPHIC CONTROLS CORPORATION
BUFFALO, N.Y.

887



DATE: 10/7/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1415

PLOT IDENTIFICATION : G - 1213

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H-2394 TO H- 2413

DATE: 10/7/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 1415	
PLOT IDENTIFICATION : G - 1214	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

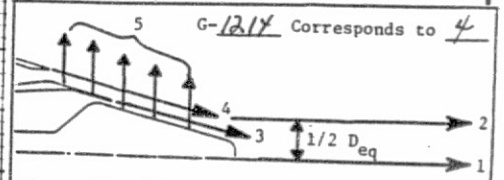
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

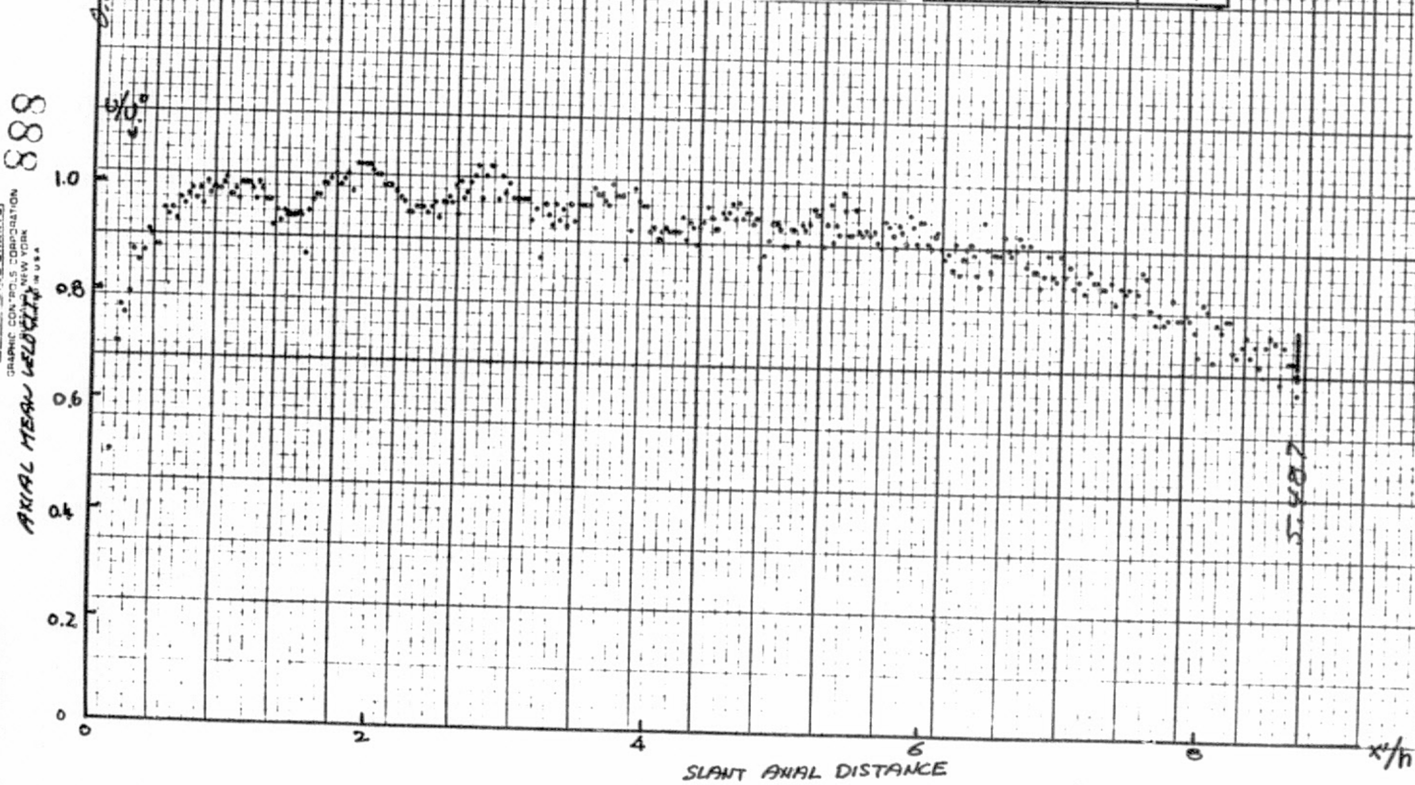
HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1415	3.202	853	1703	2.910	855
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1644	1694	853	0	5.57	1.27



G-1214 Corresponds to 4

Arrows Show LV Traverses



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DATE: 10/7/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 1415	
PLOT IDENTIFICATION : G - 1211	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- VOLTS; TRAVERSE - VOLTS; $\frac{R}{R_2}$ =

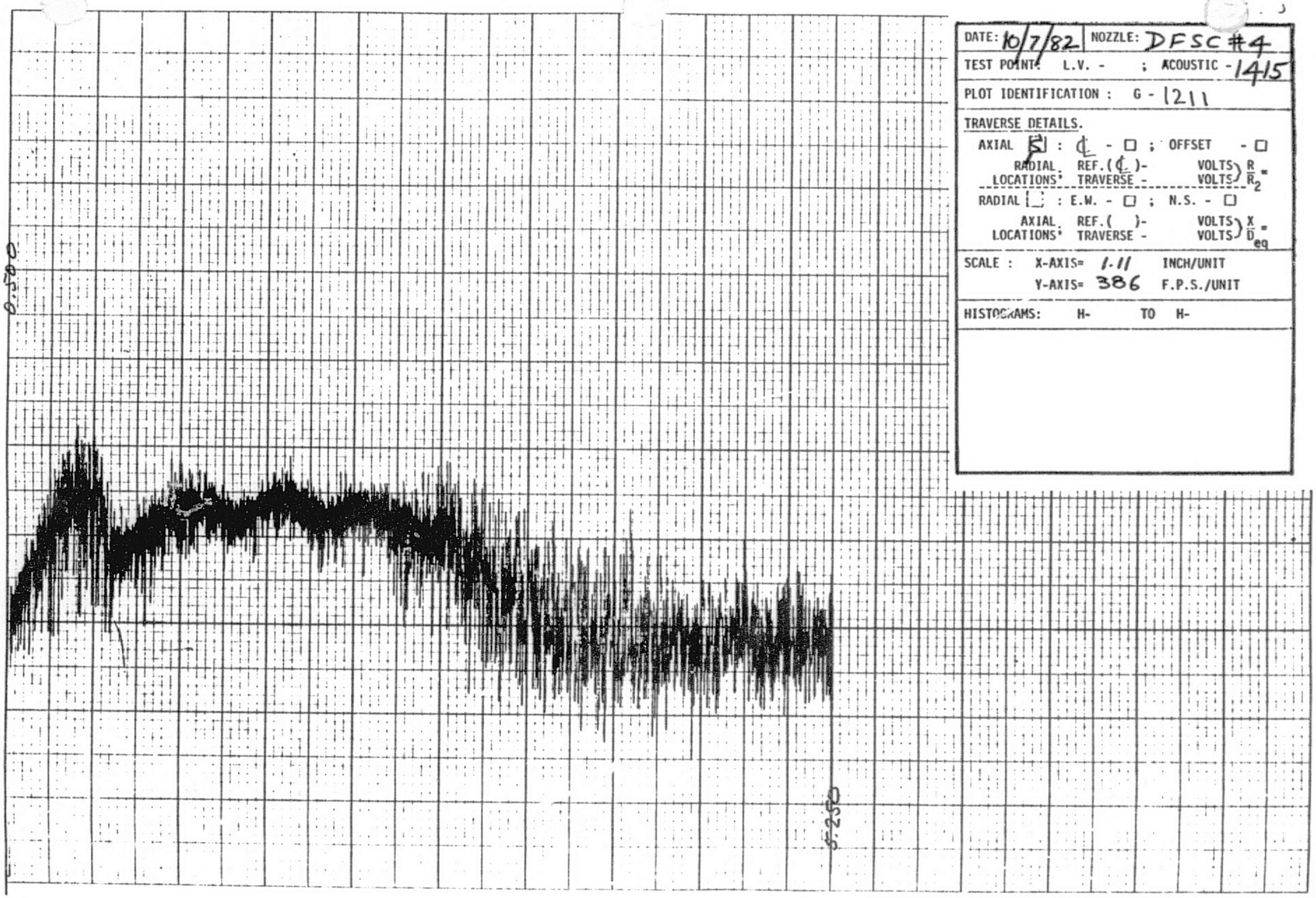
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



889

DATE: 10/7/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 1415	
PLOT IDENTIFICATION : G - 1212	

TRAVERSE DETAILS.

AXIAL [S] : ℄ - □ ; OFFSET - □

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL □ : E.W. - □ ; N.S. - □

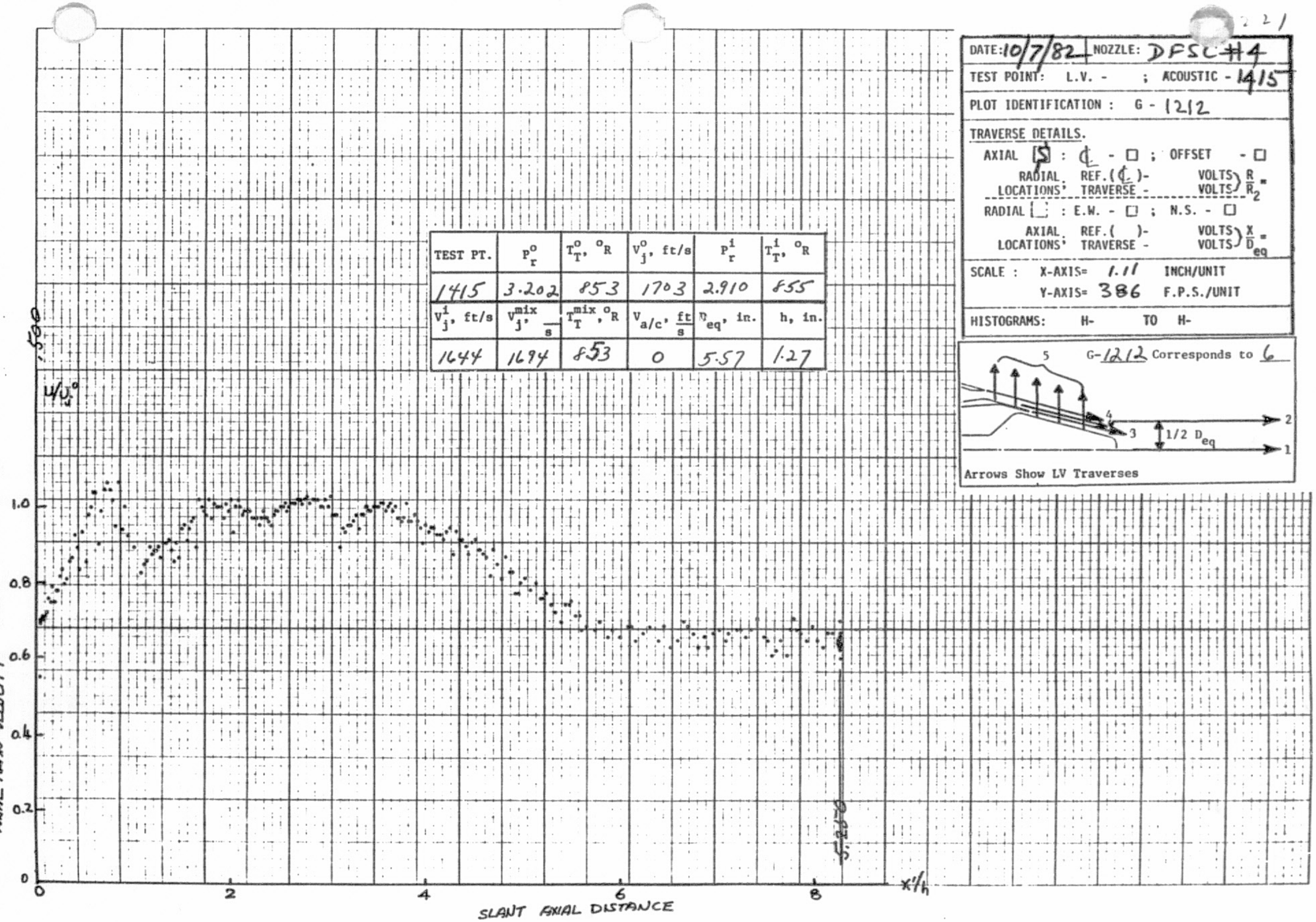
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

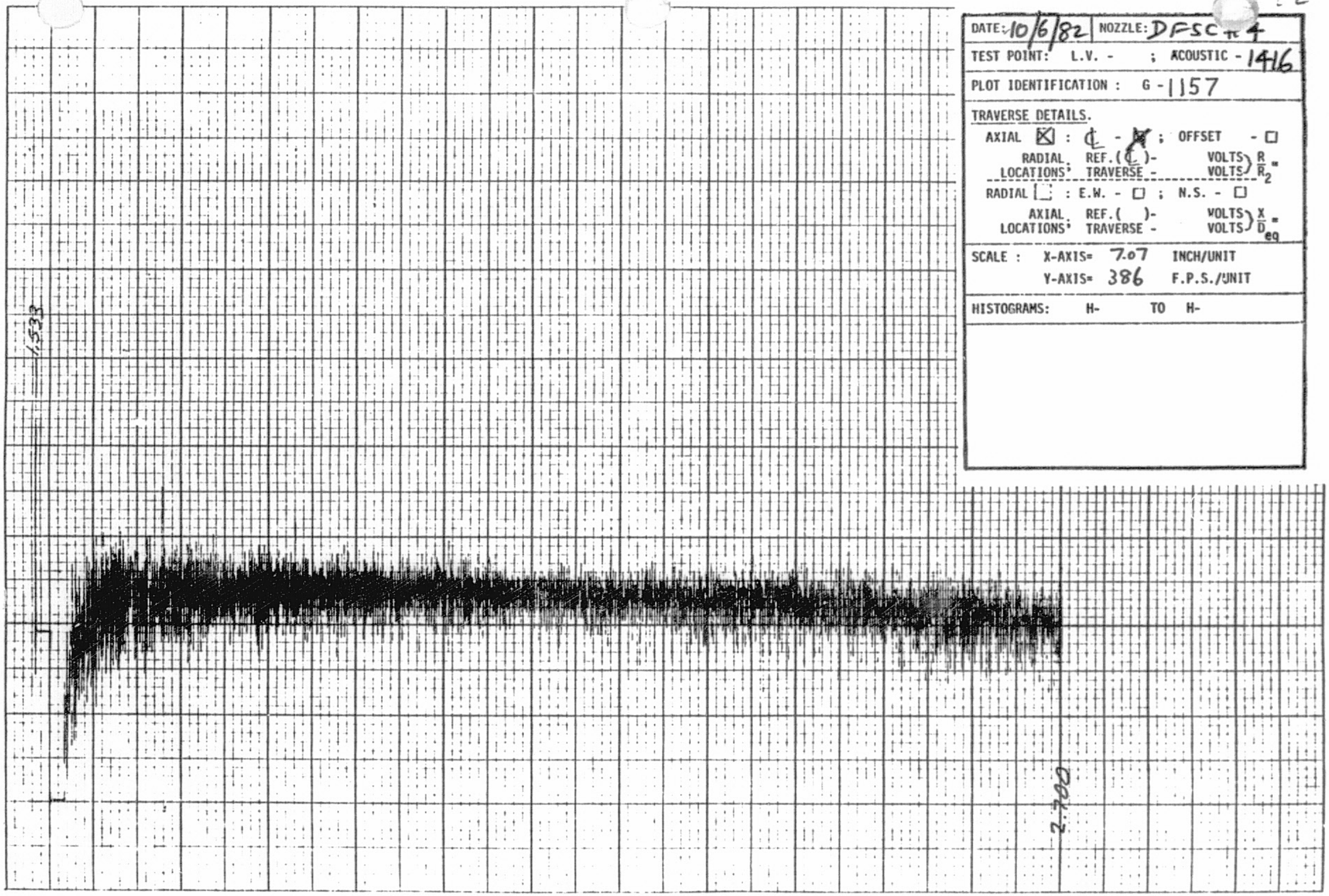
SCALE : X-AXIS= 1.11 INCH/UNIT; Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1212 Corresponds to 6

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1415	3.202	853	1703	2.910	855
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1644	1694	853	0	5.57	1.27





DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1416

PLOT IDENTIFICATION : G - 1157

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - VOLTS VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS; REF.( )- TRAVERSE - VOLTS VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.07 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

891

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DATE: 10/6/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 1416	
PLOT IDENTIFICATION : G - 1158	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

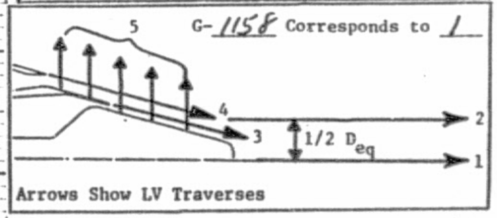
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.07 INCH/UNIT

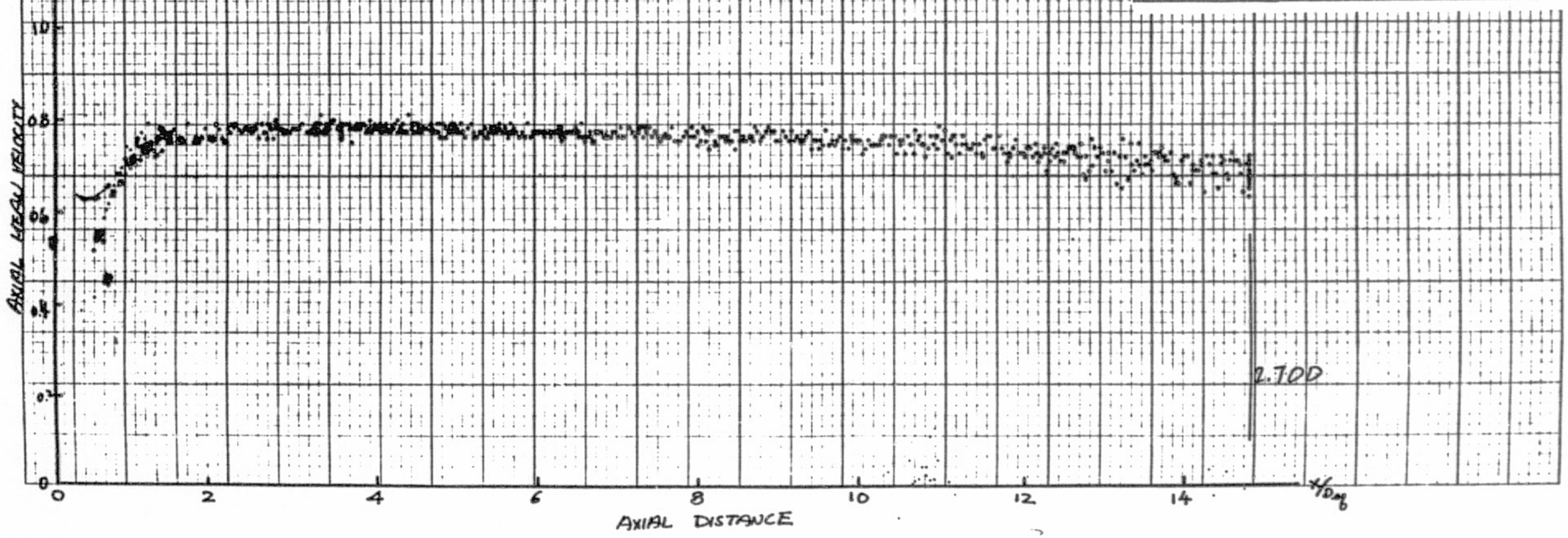
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1416	3.216	878	1730	2.909	847
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1636	1716	873	400	5.57	1.27



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DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1416

PLOT IDENTIFICATION : G - 1159

TRAVERSE DETAILS.

AXIAL [X] : ℄ - [ ] ; OFFSET - [X]

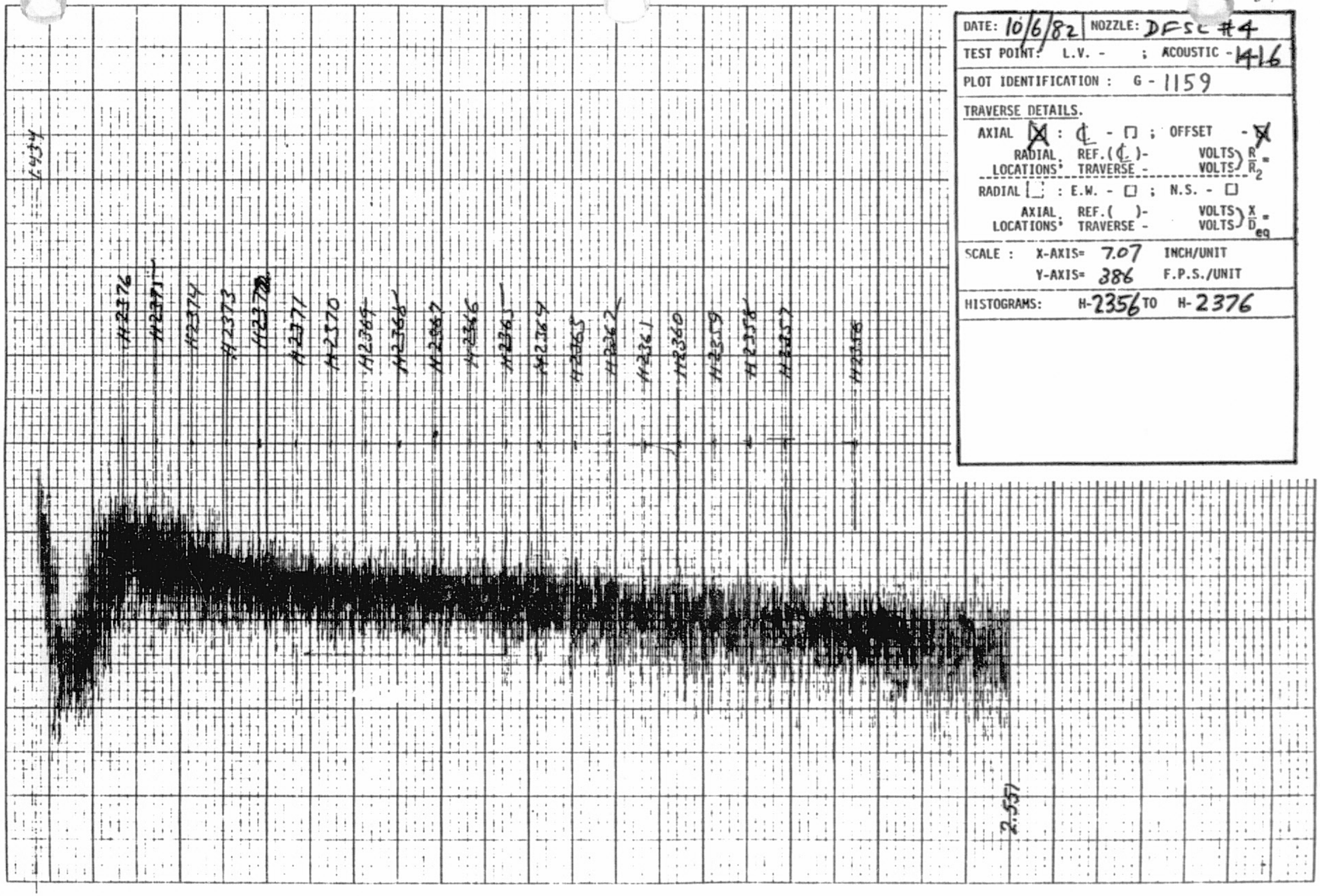
RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - [ ] ; N.S. - [ ]

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.07 INCH/UNIT
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H-2356 TO H-2376



893

NO. XY 1101

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BUFFALO, NEW YORK
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DATE: 10/6/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 1416	
PLOT IDENTIFICATION : G - 1160	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

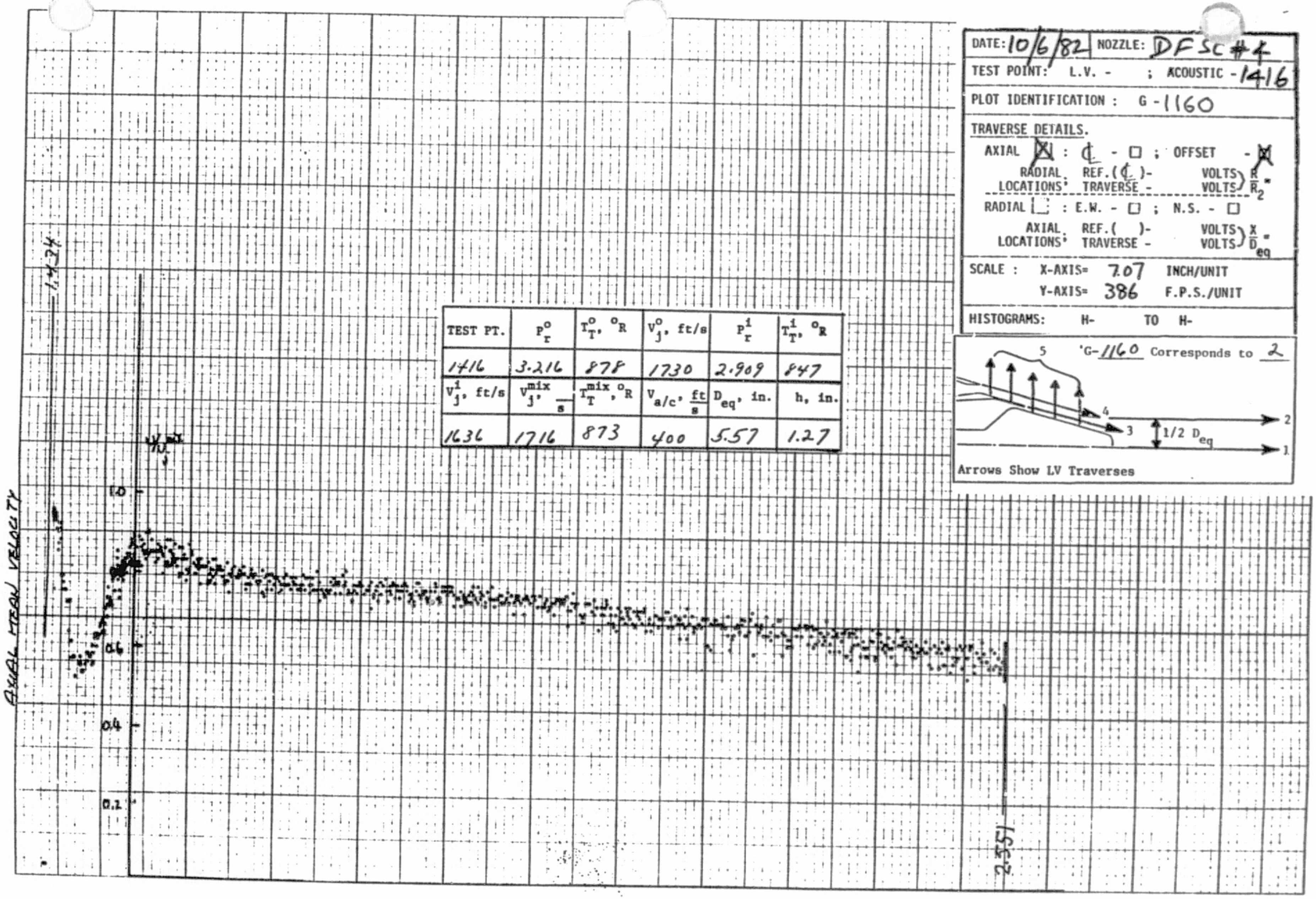
SCALE : X-AXIS= 7.07 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

'G-1160 Corresponds to 2

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1416	3.216	878	1730	2.909	847
V_j^i, ft/s	V_j^{mix}, $\frac{}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1636	1716	873	400	5.57	1.27



No. XY 1101

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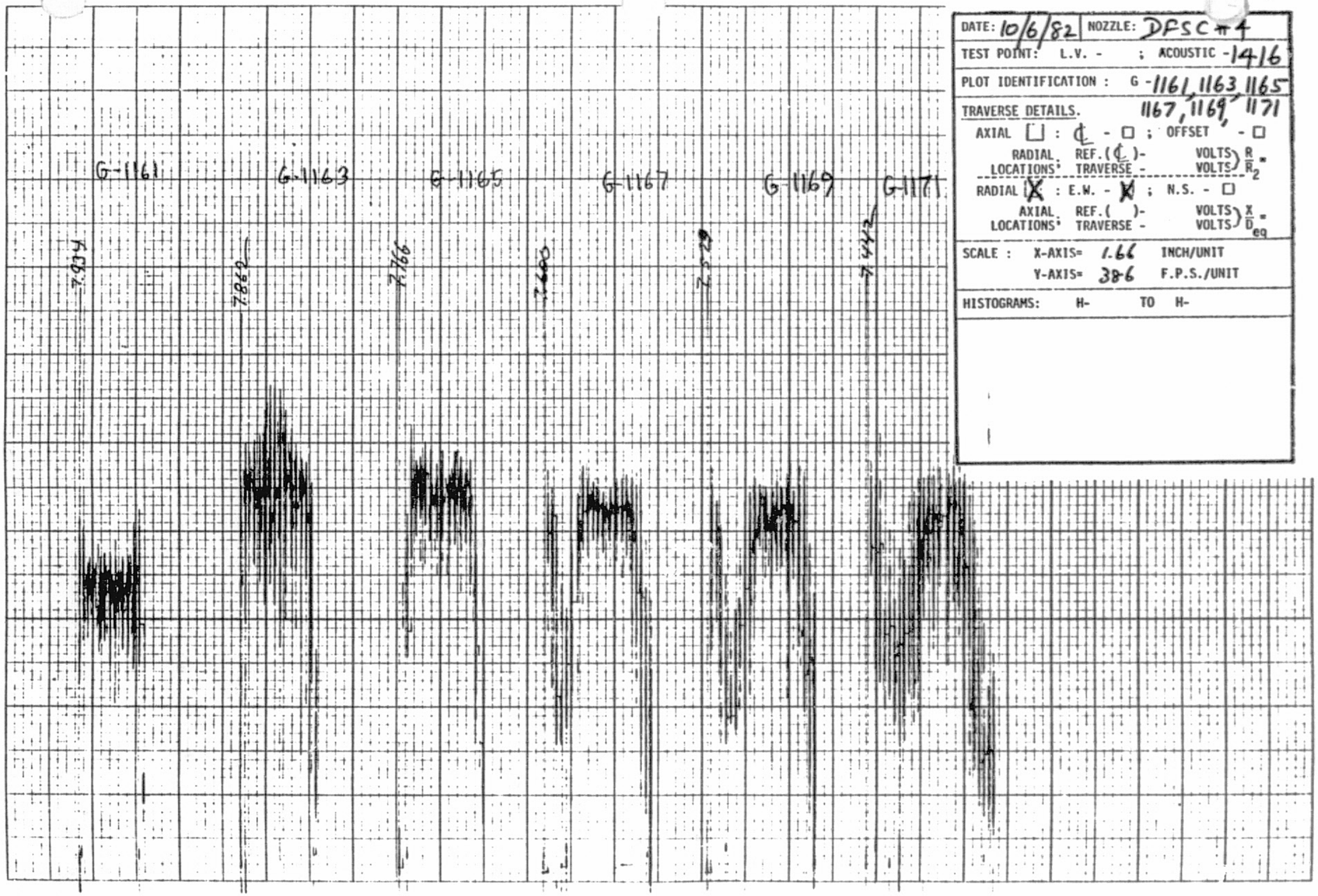

DATE: 10/6/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 1416	
PLOT IDENTIFICATION : G - 1161, 1163, 1165, 1167, 1169, 1171	

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $) \frac{R}{R_2} =$

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $) \frac{X}{D_{eq}} =$

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 38.6 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

895

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BUFFALO, NEW YORK
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DATE: 10/6/82	NOZZLE: DFSC #4
TEST POINT: L.V. - ; ACOUSTIC - 1416	
PLOT IDENTIFICATION : G - 1162, 1164, 1166	

TRAVERSE DETAILS. 1168, 1170, 1172

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

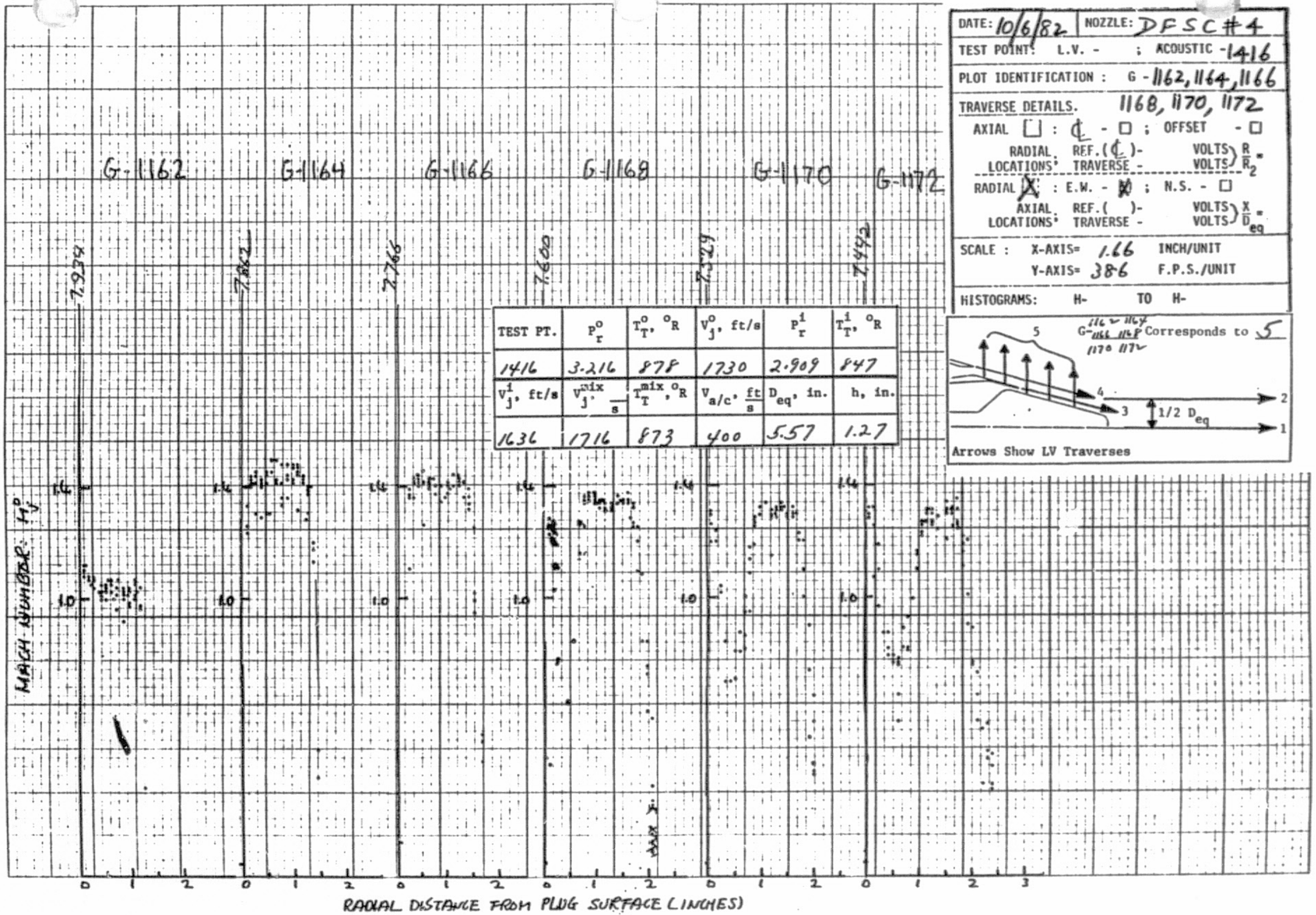
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1162, 1164, 1166, 1168, 1170, 1172 Corresponds to 5

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1416	3.216	878	1730	2.909	847
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1636	1716	873	400	5.57	1.27



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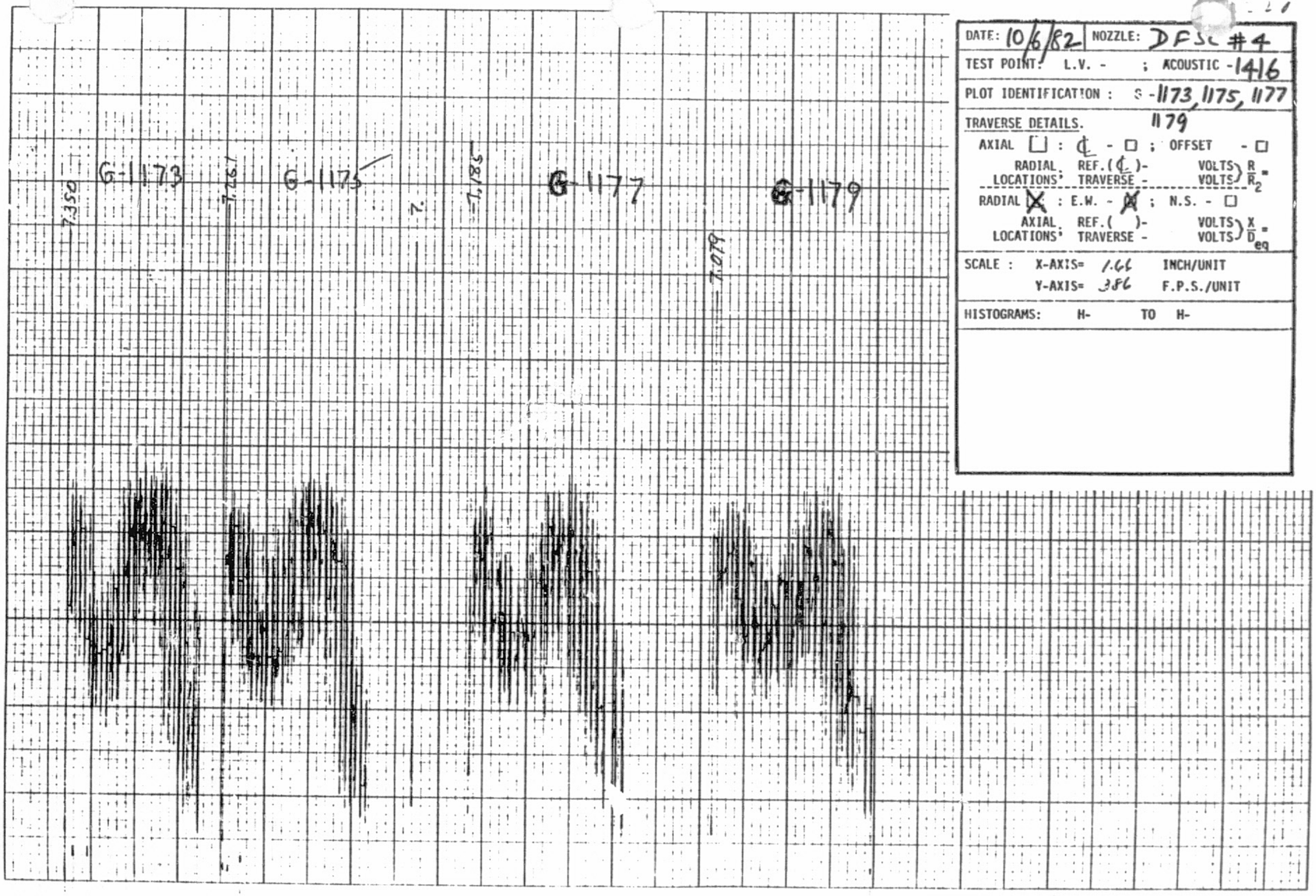


DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1416

PLOT IDENTIFICATION : S-1173, 1175, 1177, 1179

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT
Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

897

No. XY 1101

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1416	3.216	878	1730	2.909	847
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1636	1716	873	400	5.57	1.27

DATE: 10/6/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1416

PLOT IDENTIFICATION : G - 1174, 1176, 1178, 1180

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF. (℄) - TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

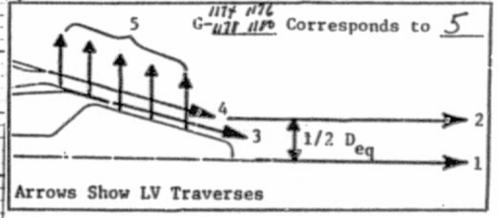
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

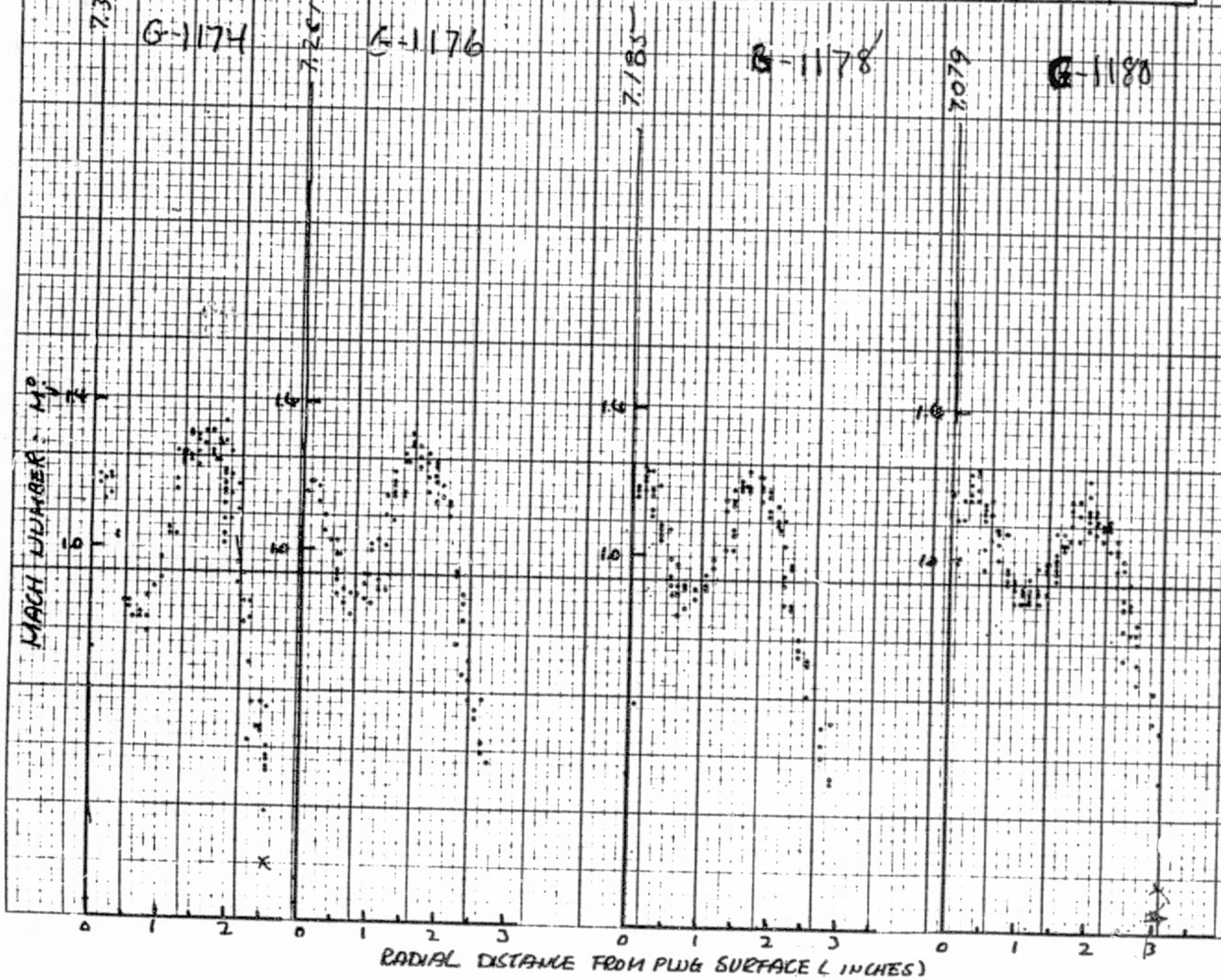
AXIAL LOCATIONS; REF. ( ) - TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-





No. XY 1101

868

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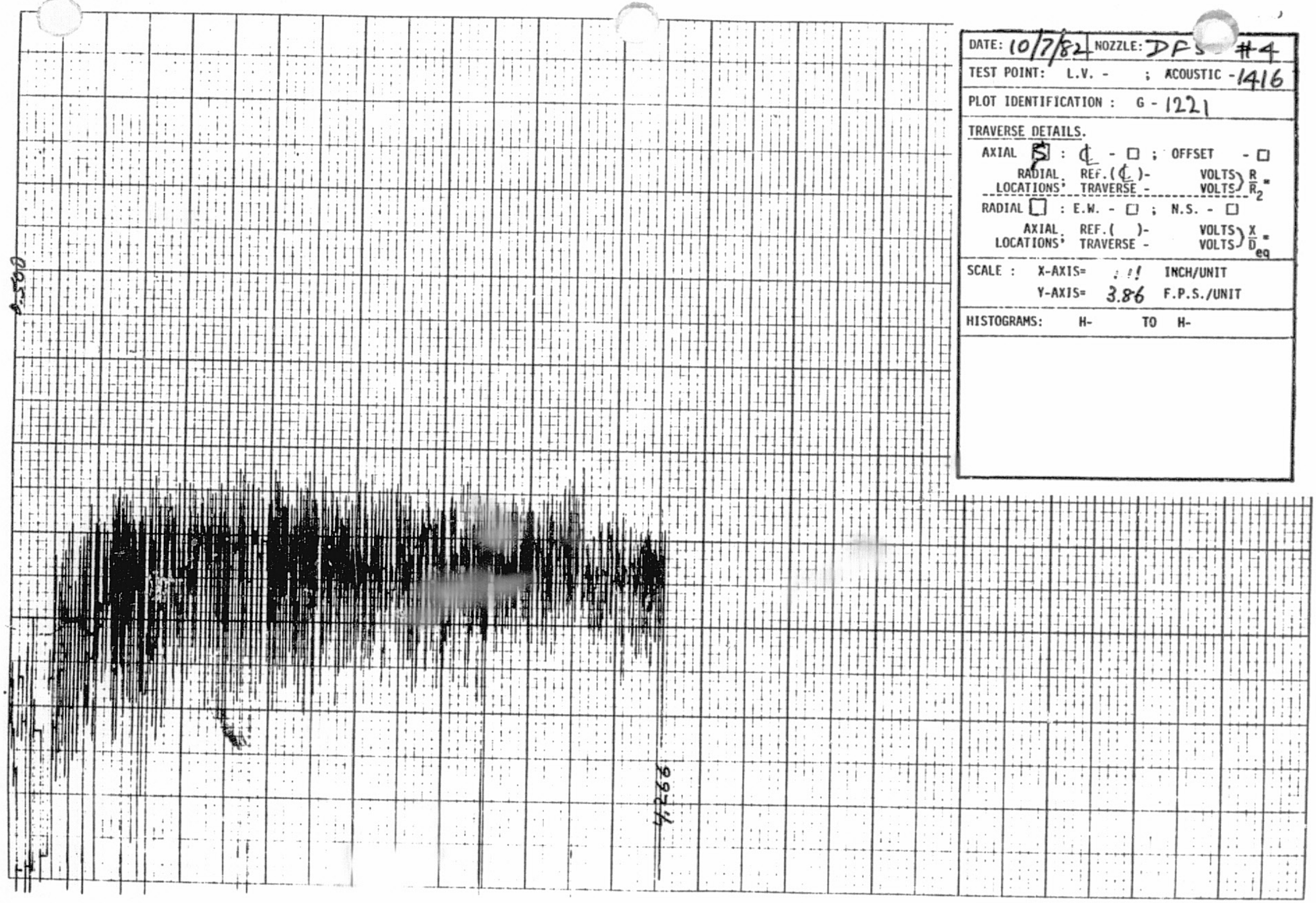

DATE: 10/7/82 NOZZLE: DFS #4

TEST POINT: L.V. - ; ACOUSTIC - 1416

PLOT IDENTIFICATION : G - 1221

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= .11 INCH/UNIT

Y-AXIS= 3.86 F.P.S./UNIT

HISTOGRAMS: H- TO H-

899

No. XY 1101

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DATE: 10/7/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1416

PLOT IDENTIFICATION : G - 1222

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

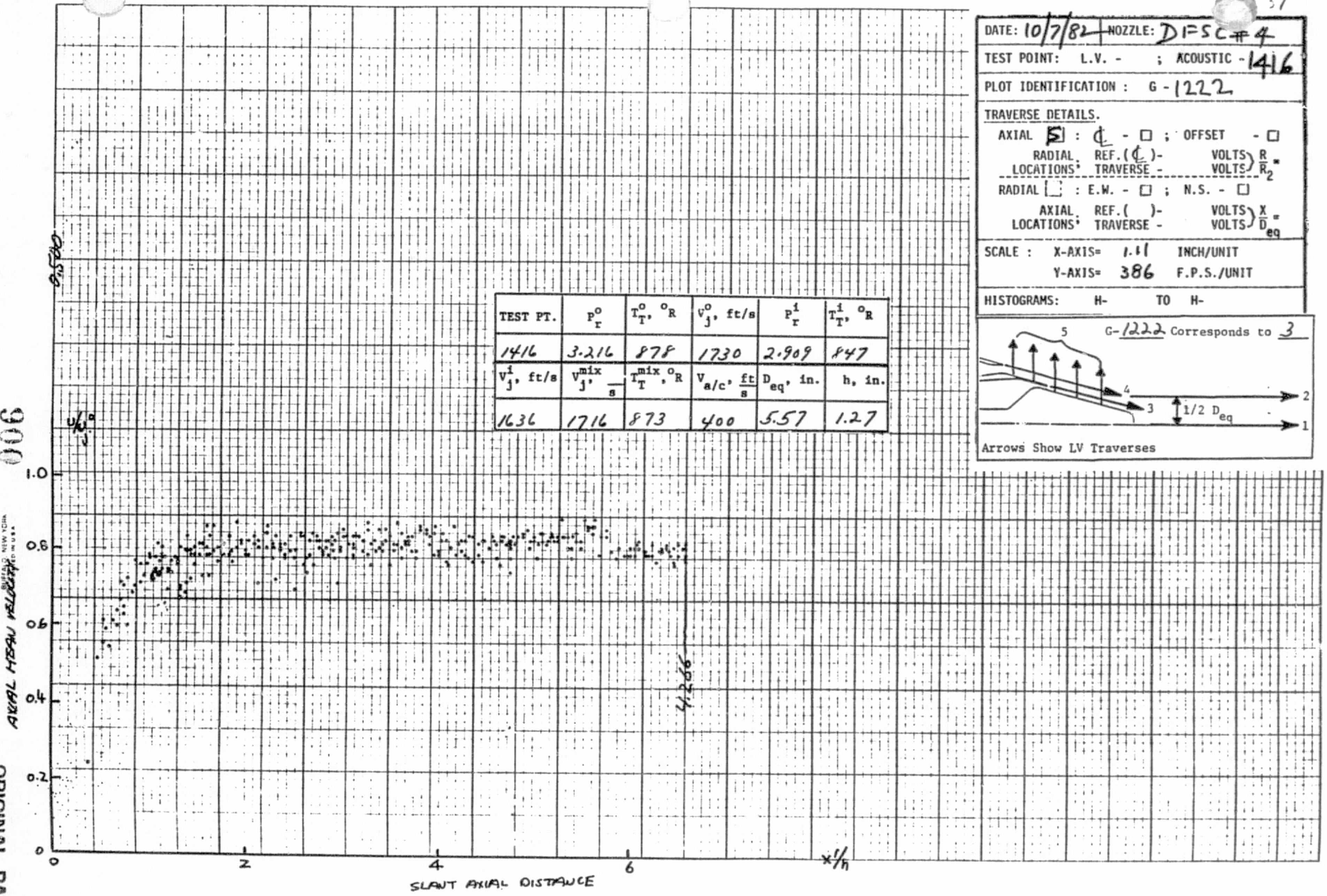
Y-AXIS= 386 F.P.S./UNIT

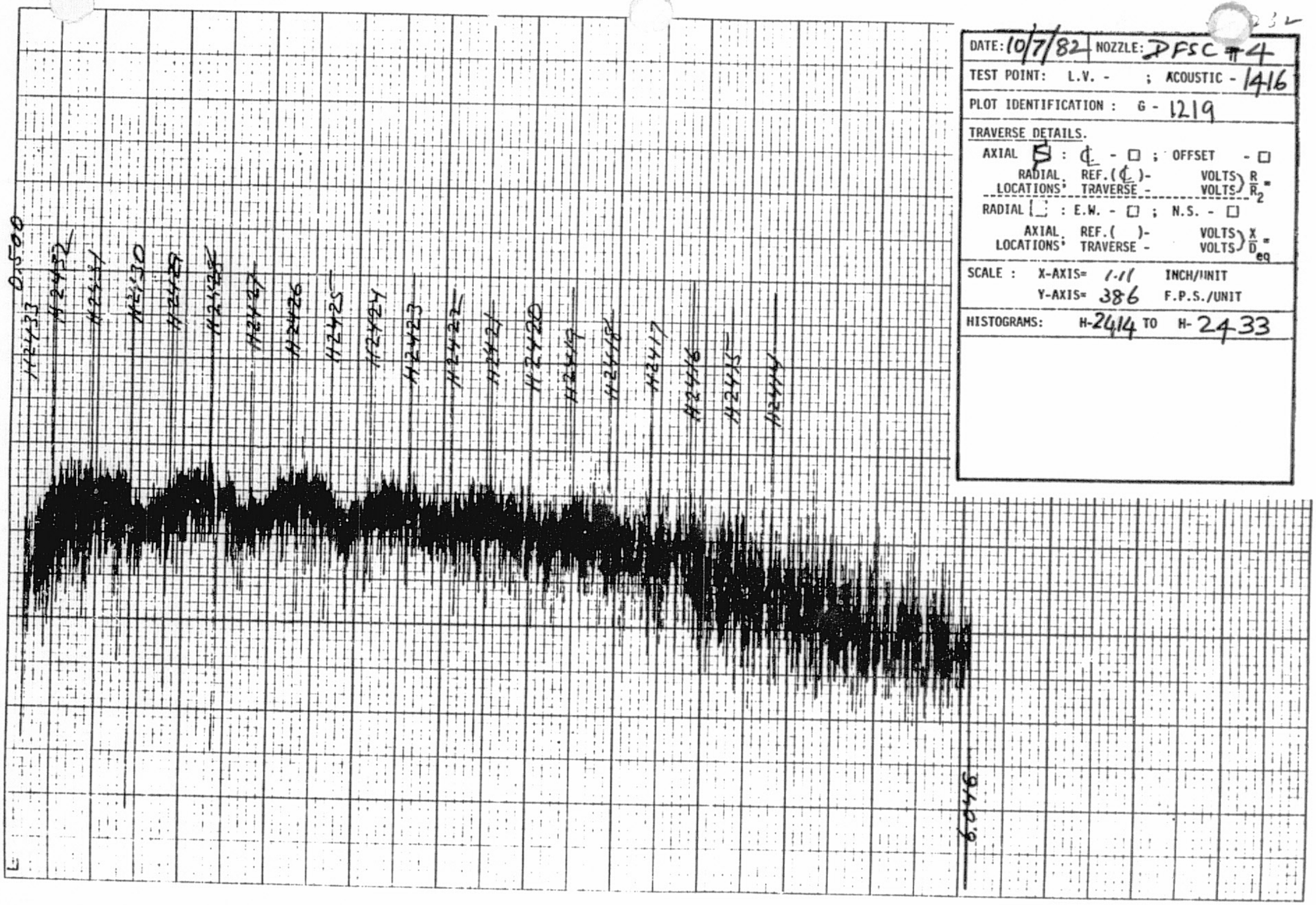
HISTOGRAMS: H- TO H-

G-1222 Corresponds to 3

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1416	3.216	878	1730	2.909	847
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1636	1716	873	400	5.57	1.27





DATE: 10/7/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1416

PLOT IDENTIFICATION : G - 1219

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H-2414 TO H-2433

NO. XY 1101

RECORDING CHARTS

106

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DATE: 10/7/82	NOZZLE: DFSC # 4
TEST POINT: L.V. - ; ACOUSTIC - 1416	
PLOT IDENTIFICATION : G - 1220	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

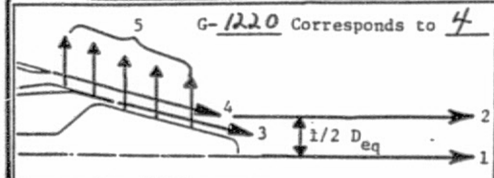
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT
Y-AXIS= 386 F.P.S./UNIT

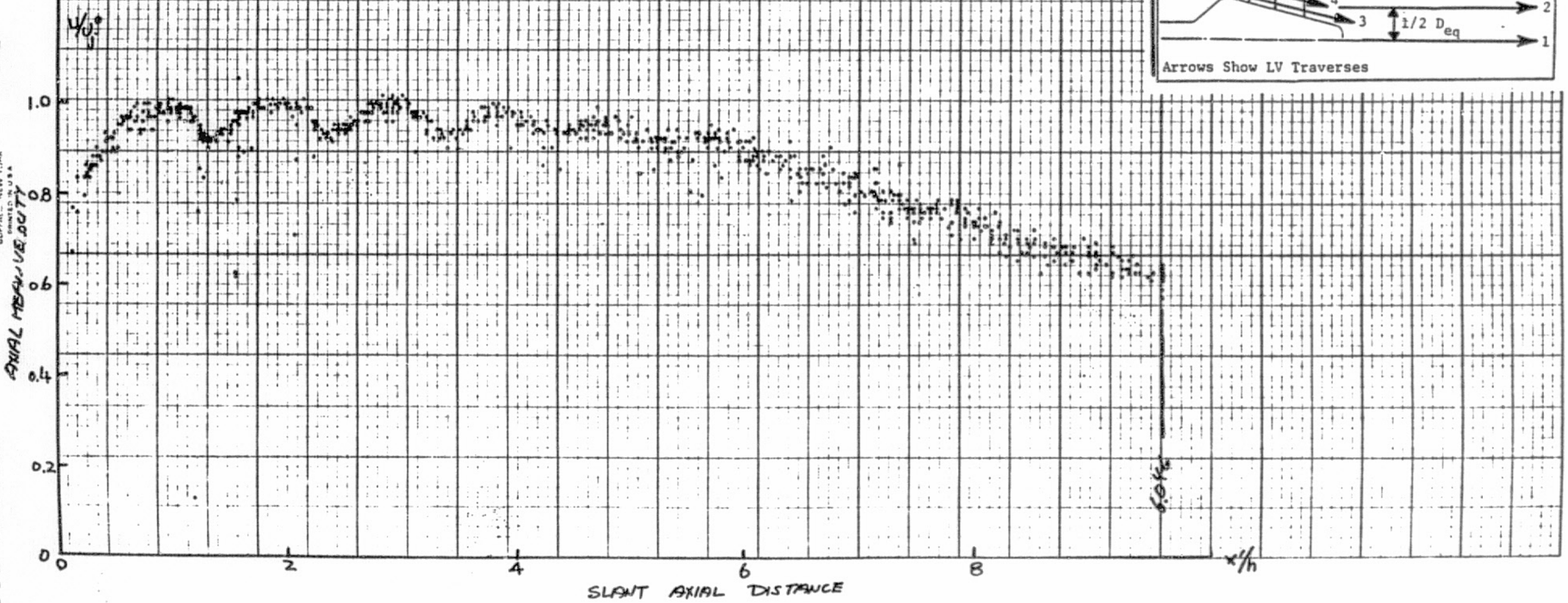
HISTOGRAMS: H- TO H-

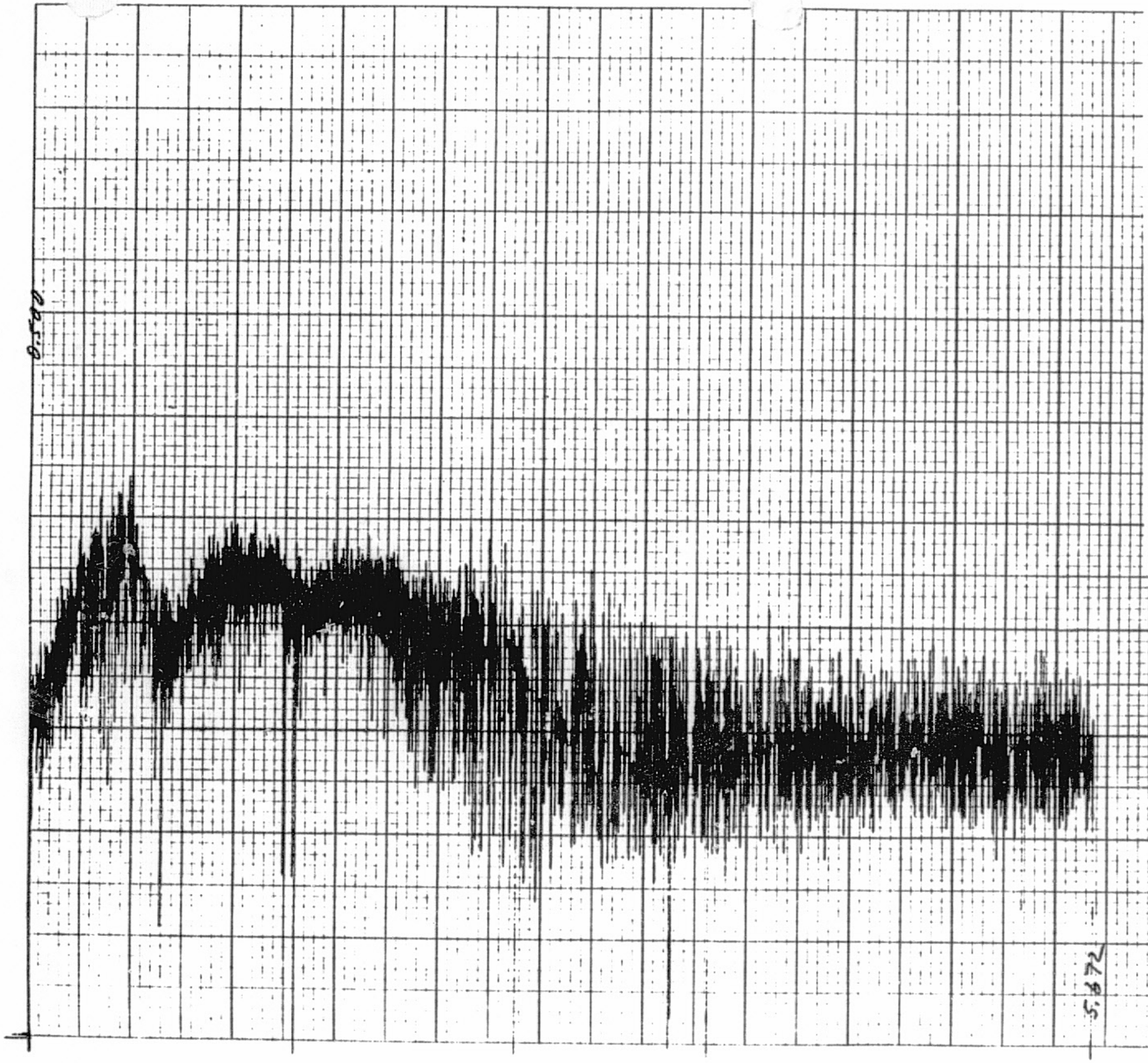
G-1220 Corresponds to 4



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1416	3.216	878	1730	2.909	847
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{s/c}$, ft/s	D_{eq}, in.	h, in.
1636	1716	873	400	5.57	1.27





DATE: 10/7/82 NOZZLE: DFSC 4

TEST POINT: L.V. - ; ACOUSTIC - 1416

PLOT IDENTIFICATION : G - 1217

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

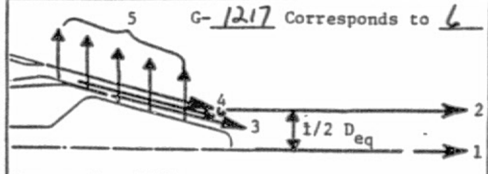
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G- 1217 Corresponds to 6



Arrows Show LV Traverses

DATE: 10/7/82 NOZZLE: DFSC #4

TEST POINT: L.V. - ; ACOUSTIC - 1416

PLOT IDENTIFICATION : G - 1218

TRAVERSE DETAILS.

AXIAL [5] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

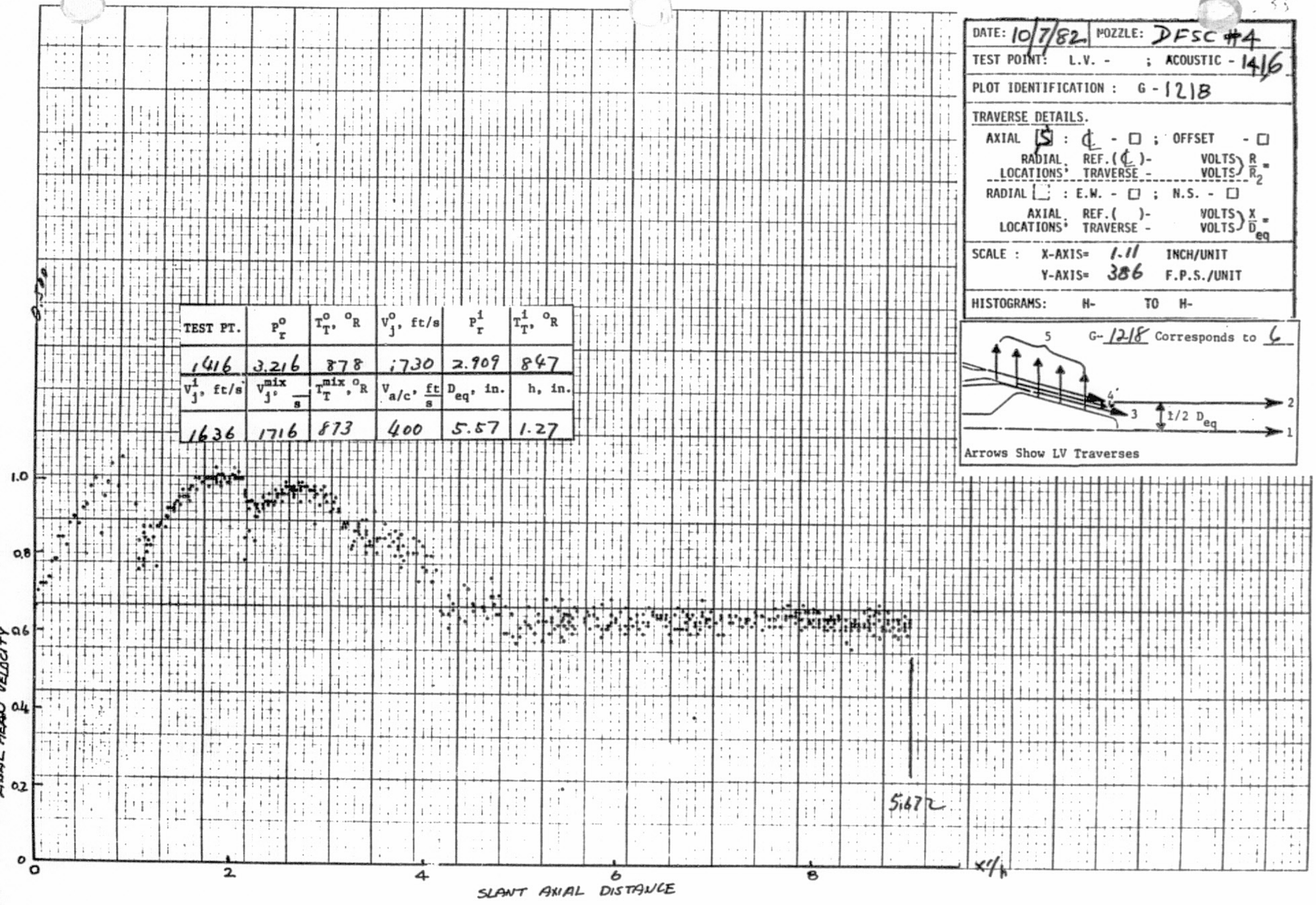
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 386 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1416	3.216	878	1730	2.909	847
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1636	1716	873	400	5.57	1.27



NO. XY 1101

904

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5.2.3.5 Mean Velocity Traces of DFSC-5

DATE: 11/4/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 511

PLOT IDENTIFICATION : G - 1239

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

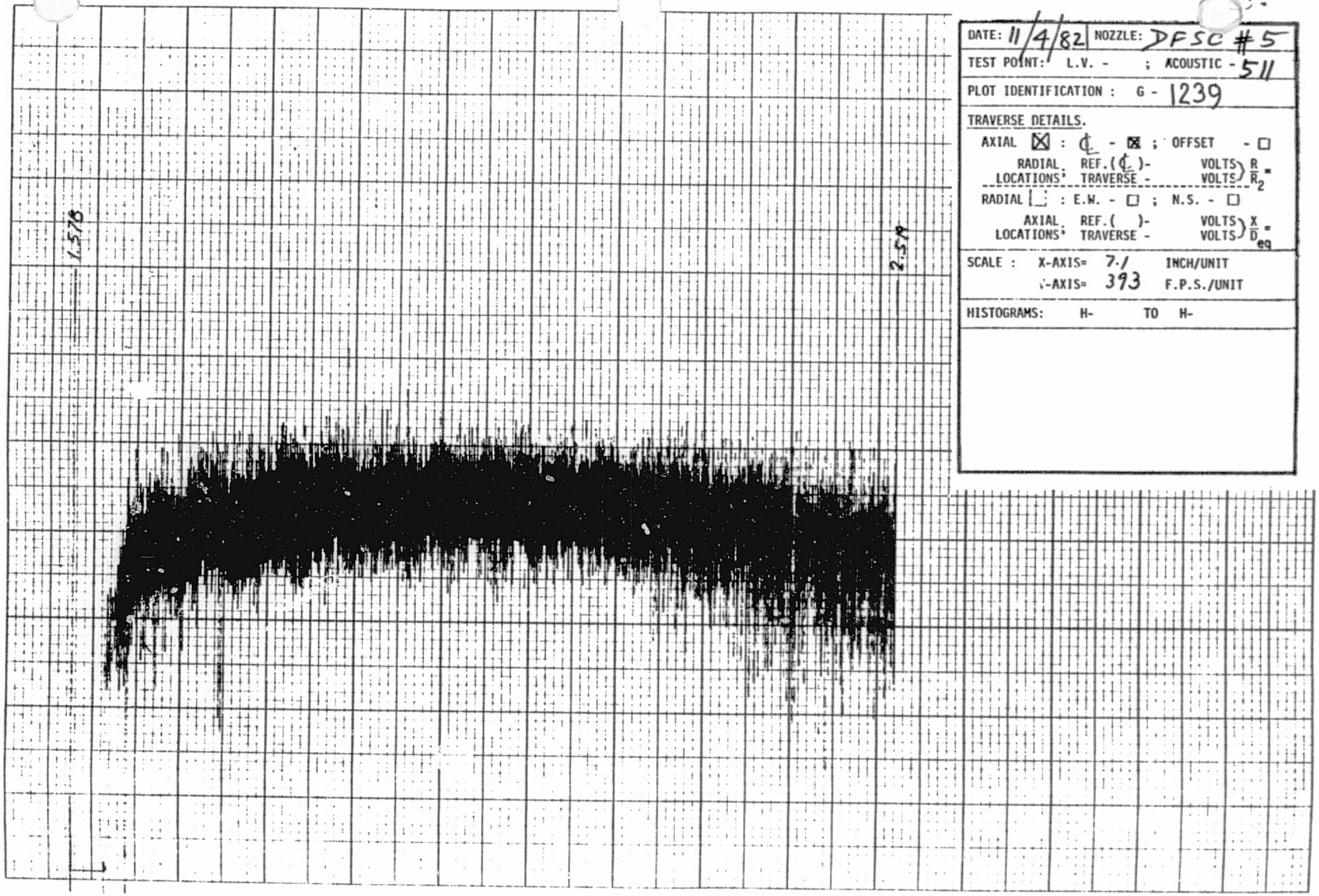
RADIAL LOCATIONS: REF.(℄)- VOLTS} $\frac{R}{R_2}$ =
TRAVERSE - VOLTS

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- VOLTS} $\frac{X}{D_{eq}}$ =
TRAVERSE - VOLTS

SCALE : X-AXIS= 7.1 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



DATE: 11/4/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 511	
PLOT IDENTIFICATION : G - 1240	

TRAVERSE DETAILS.

AXIAL [X] : ℄ - [X] ; OFFSET - [ ]

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - [ ] ; N.S. - [ ]

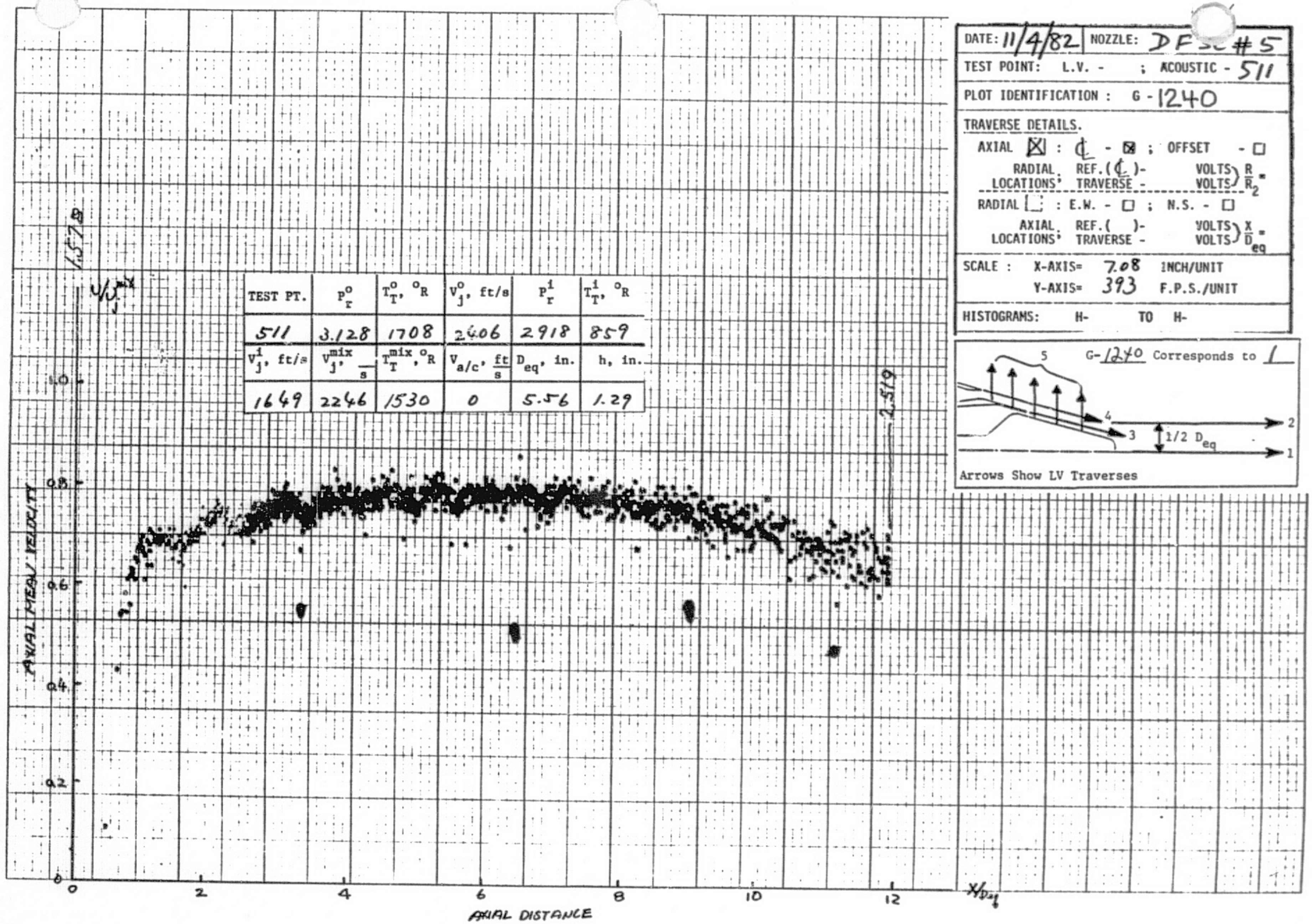
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
511	3.128	1708	2606	2918	859
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1649	2246	1530	0	5.56	1.29



No. XY 1101

907

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

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DATE: 11/4/82 NOZZLE: DFSC#5

TEST POINT: L.V. - ; ACOUSTIC - 511

PLOT IDENTIFICATION : G - 1241

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

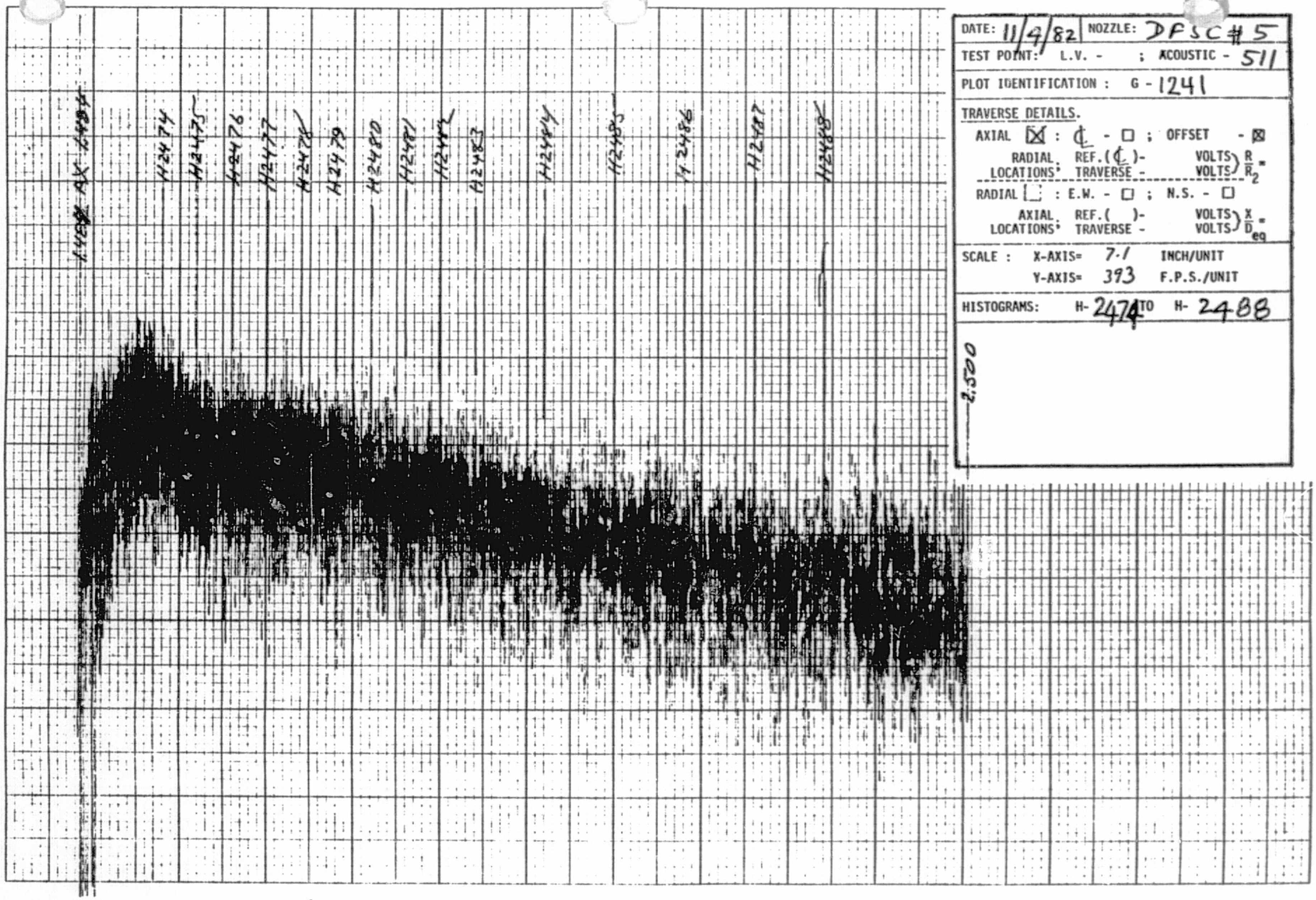
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H-2474 TO H-2488



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908

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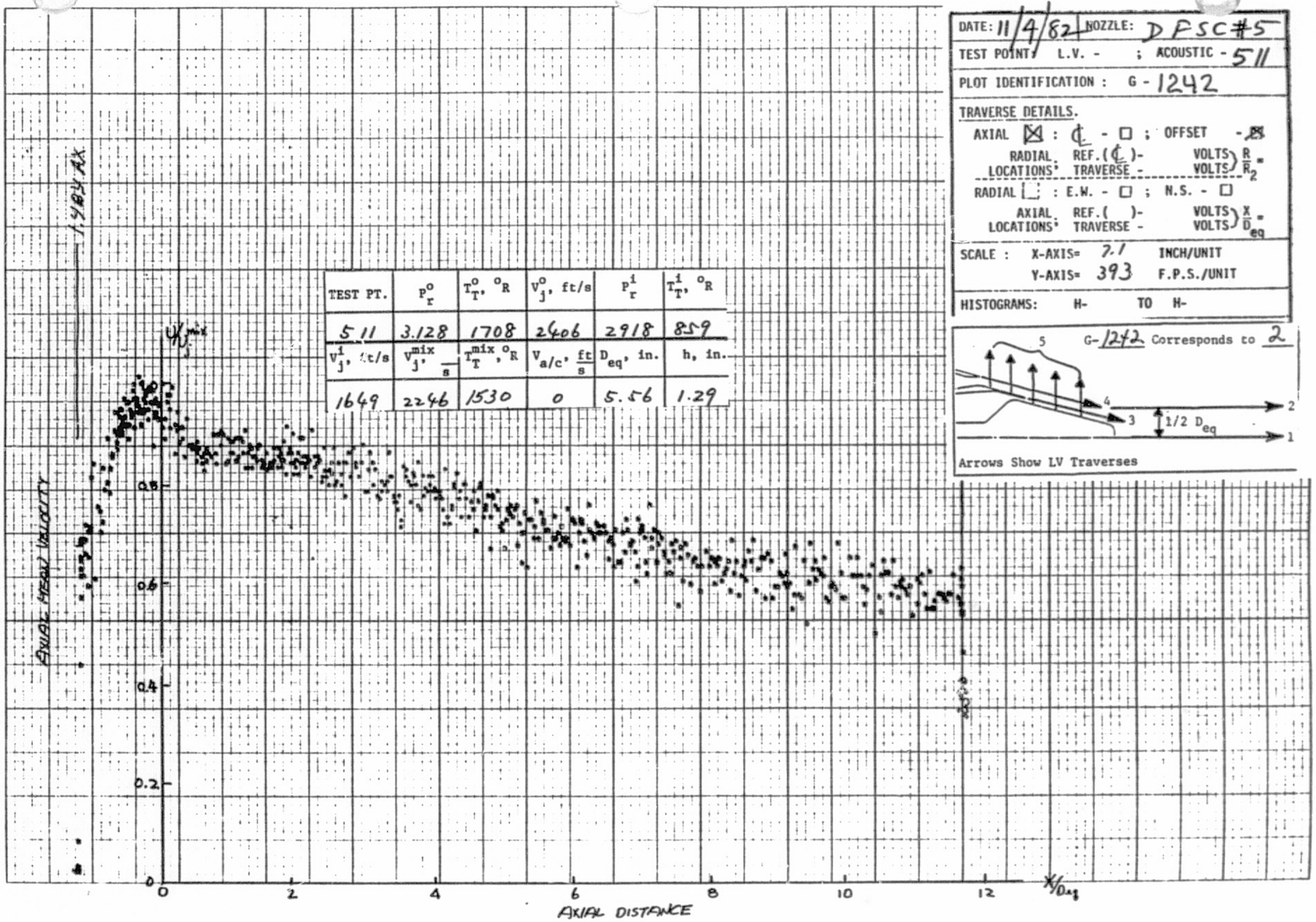

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
511	3.128	1708	2606	2918	859
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1649	2246	1530	0	5.56	1.29

DATE: 11/4/82 NOZZLE: DFSC#5

TEST POINT: L.V. - ; ACOUSTIC - 511

PLOT IDENTIFICATION : G - 1242

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS) VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS) VOLTS) X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

909

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910

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GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
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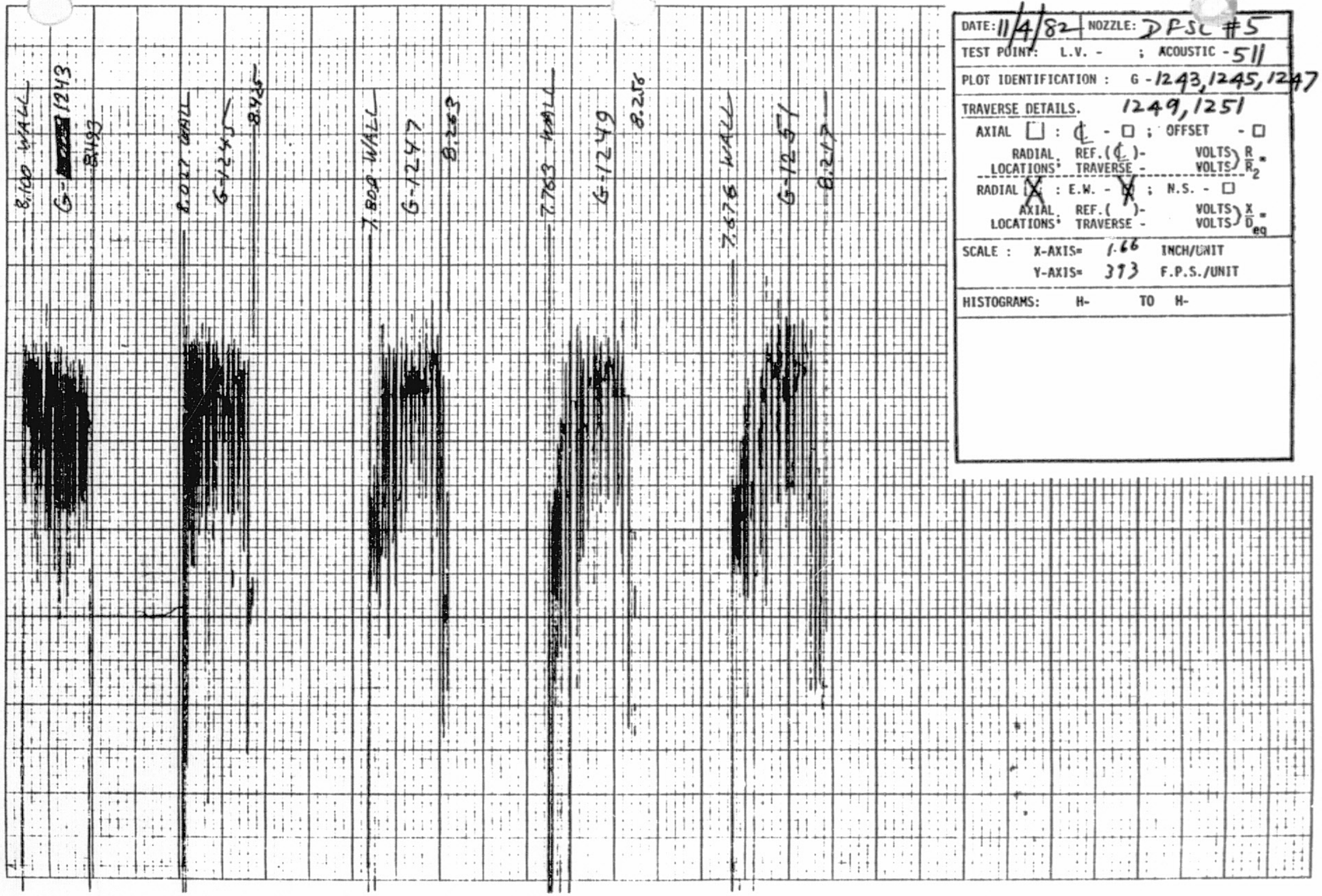

DATE: 11/4/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 511

PLOT IDENTIFICATION : G - 1243, 1245, 1247, 1249, 1251

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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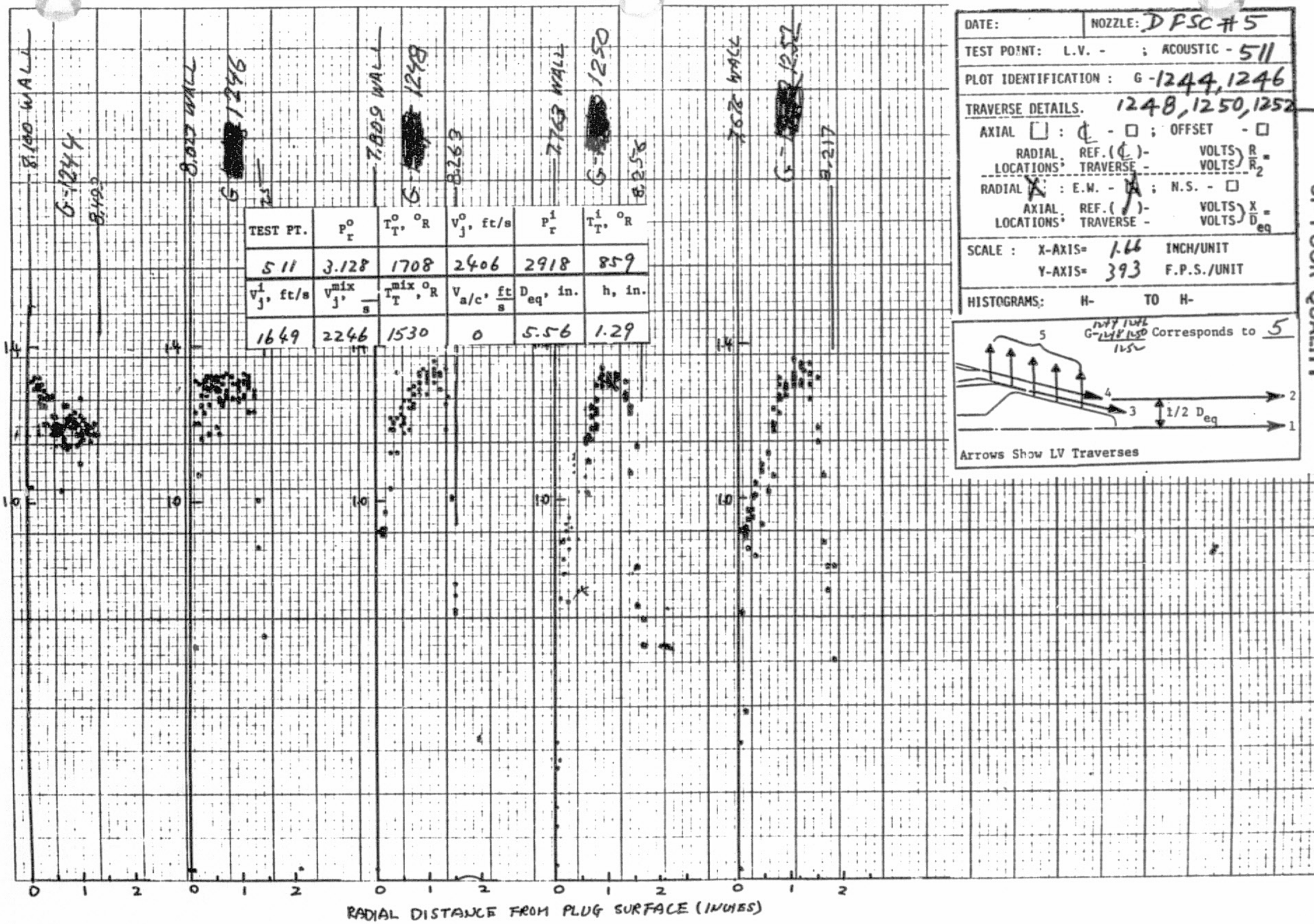
S-7

NO. XY 1101

911

MACH NUMBER : M



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
511	3.128	1708	2406	2918	859
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1649	2246	1530	0	5.56	1.29

DATE: NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 511

PLOT IDENTIFICATION : G-1244, 1246, 1248, 1250, 1252

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1244, 1246, 1248, 1250, 1252 Corresponds to 5

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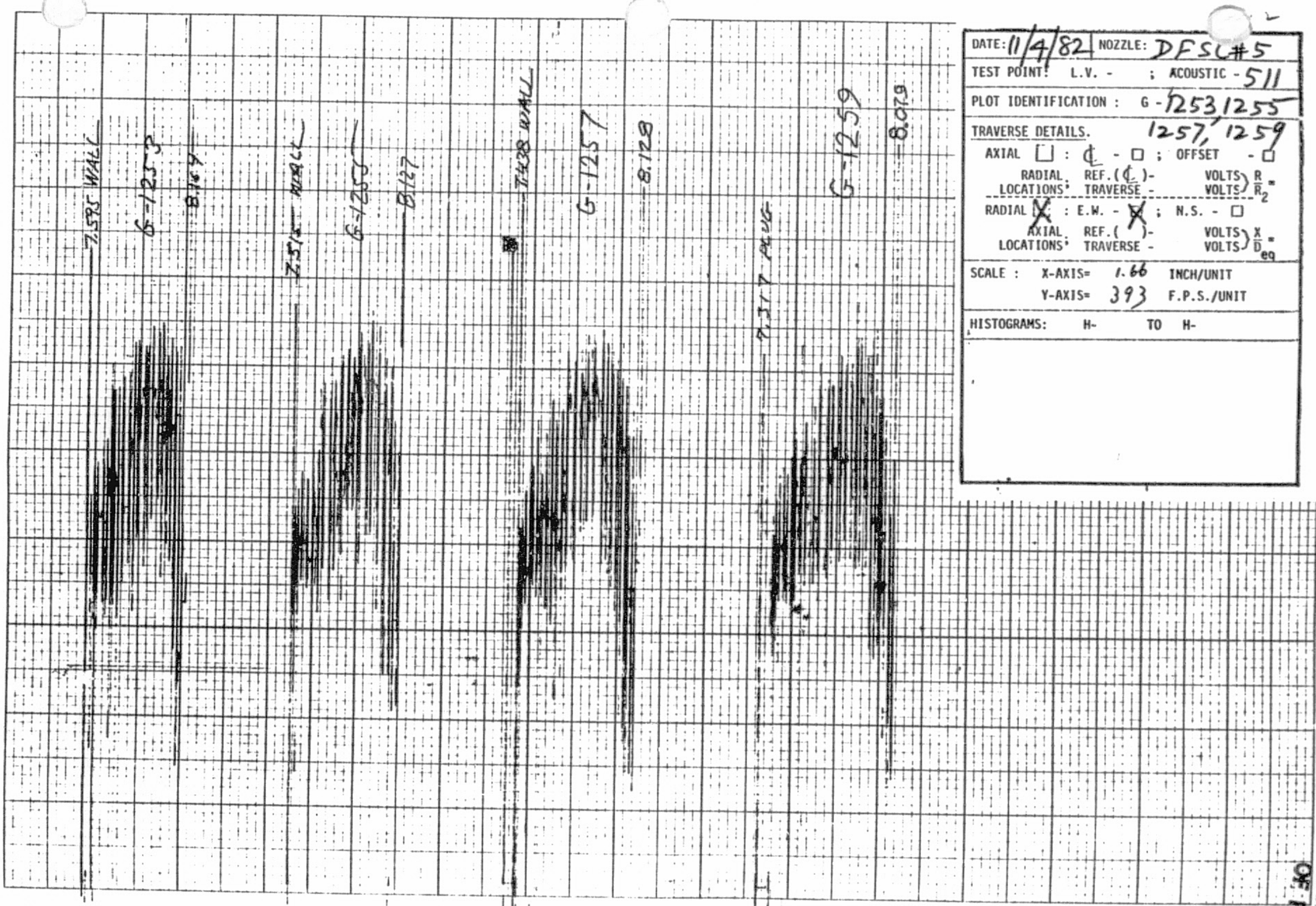


DATE: 11/4/82 NOZZLE: DFSC#5

TEST POINT: L.V. - ; ACOUSTIC - 511

PLOT IDENTIFICATION : G - 1253 1255 1257, 1259

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
511	3.128	1708	2406	2918	859
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1649	2246	1530	0	5.56	1.29

DATE: 11/4/82 NOZZLE: DFSC#5

TEST POINT: L.V. - ; ACOUSTIC - 511

PLOT IDENTIFICATION : G - 1254, 1256

TRAVERSE DETAILS. 1258, 1260

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

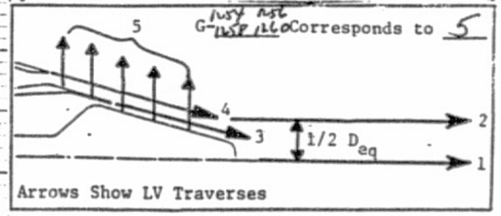
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

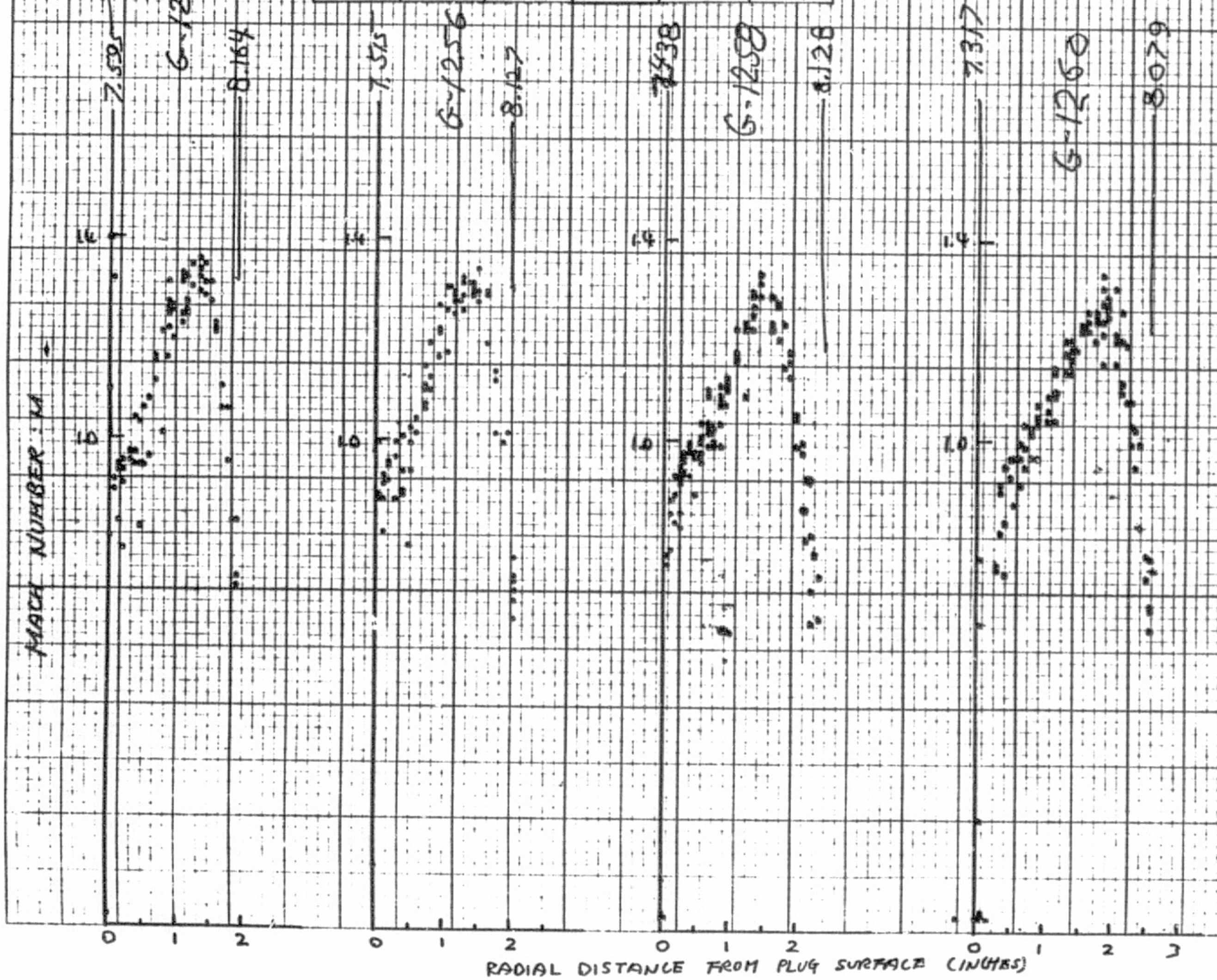
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-





DATE: 11/9/82 | NOZZLE: DFSC#5

TEST POINT: L.V. - ; ACOUSTIC - 511

PLOT IDENTIFICATION : G - 2567

TRAVERSE DETAILS.

AXIAL [x] : ℄ - □ ; OFFSET - □

RADIAL REF.(℄)- VOLTS) $\frac{R}{R_2}$ =

LOCATIONS: TRAVERSE - VOLTS)

RADIAL [ ] : E.W. - □ ; N.S. - □

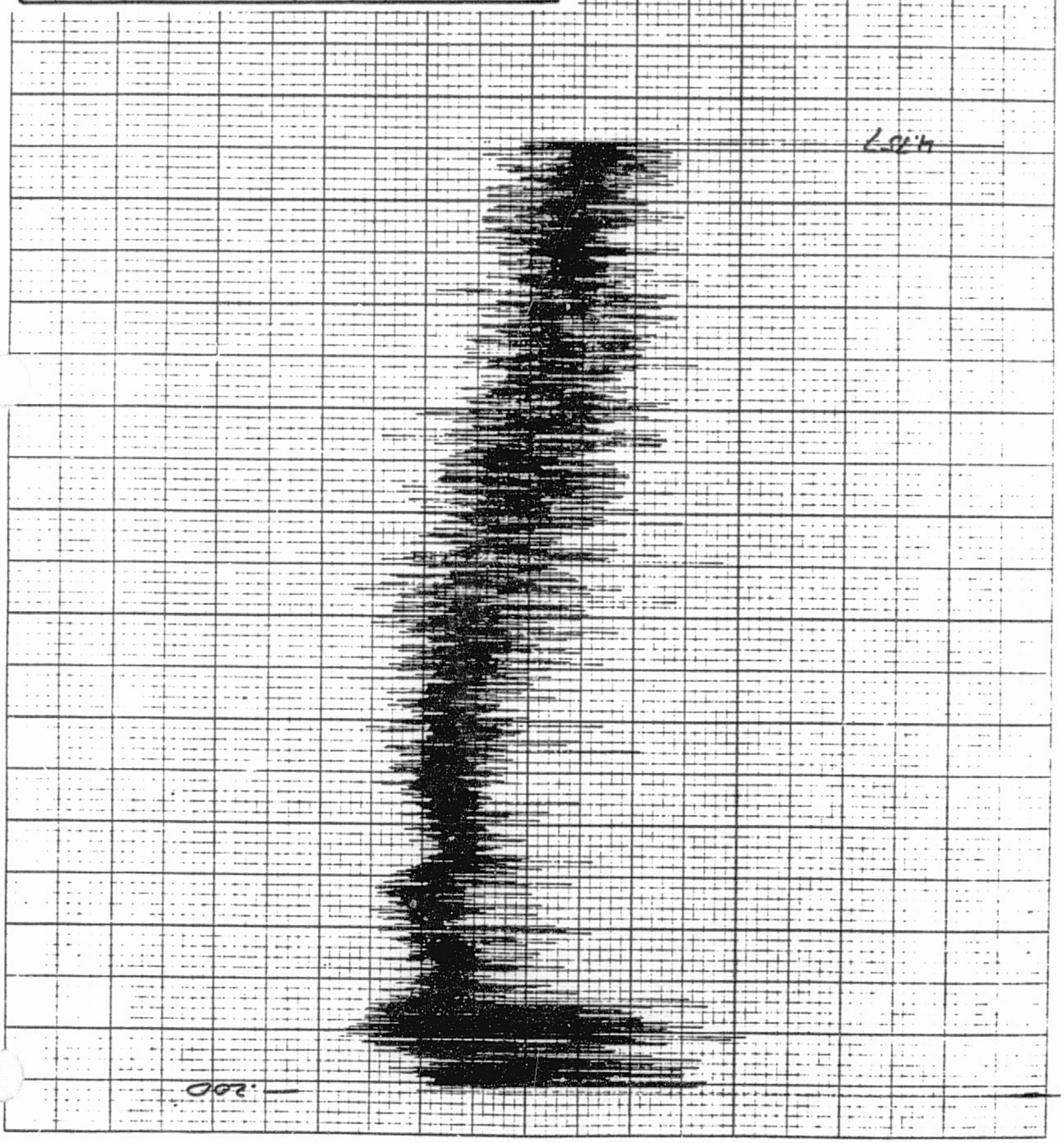
AXIAL REF.( )- VOLTS) $\frac{X}{D_{eq}}$ =

LOCATIONS: TRAVERSE - VOLTS)

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



DATE: 11/9/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 511	
PLOT IDENTIFICATION : G - 2568	

TRAVERSE DETAILS.

AXIAL [✓] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

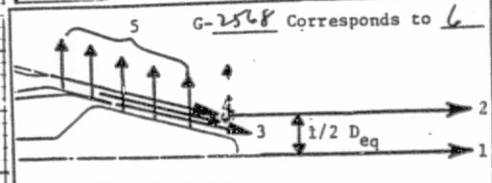
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

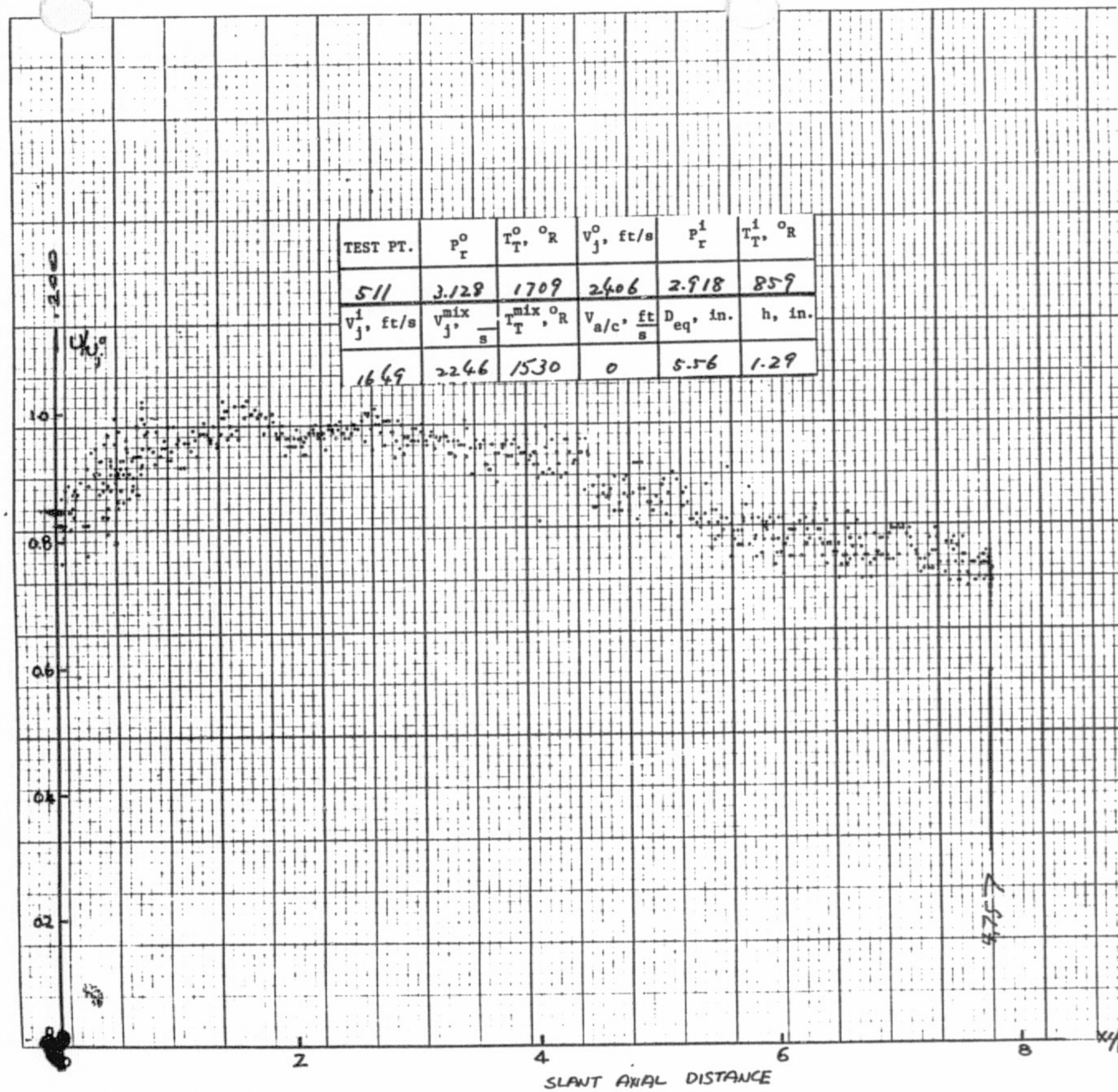
HISTOGRAMS: H- TO H-

G-2568 Corresponds to 6



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
511	3.128	1709	2406	2.918	859
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1649	2246	1530	0	5.56	1.29



NO. XY 1101

915

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DATE: 11/9/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ;	ACOUSTIC - 511
PLOT IDENTIFICATION : G - 2569	

TRAVERSE DETAILS.

AXIAL [5] : ℄ - □ ; OFFSET - □

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS } R/R_2 =

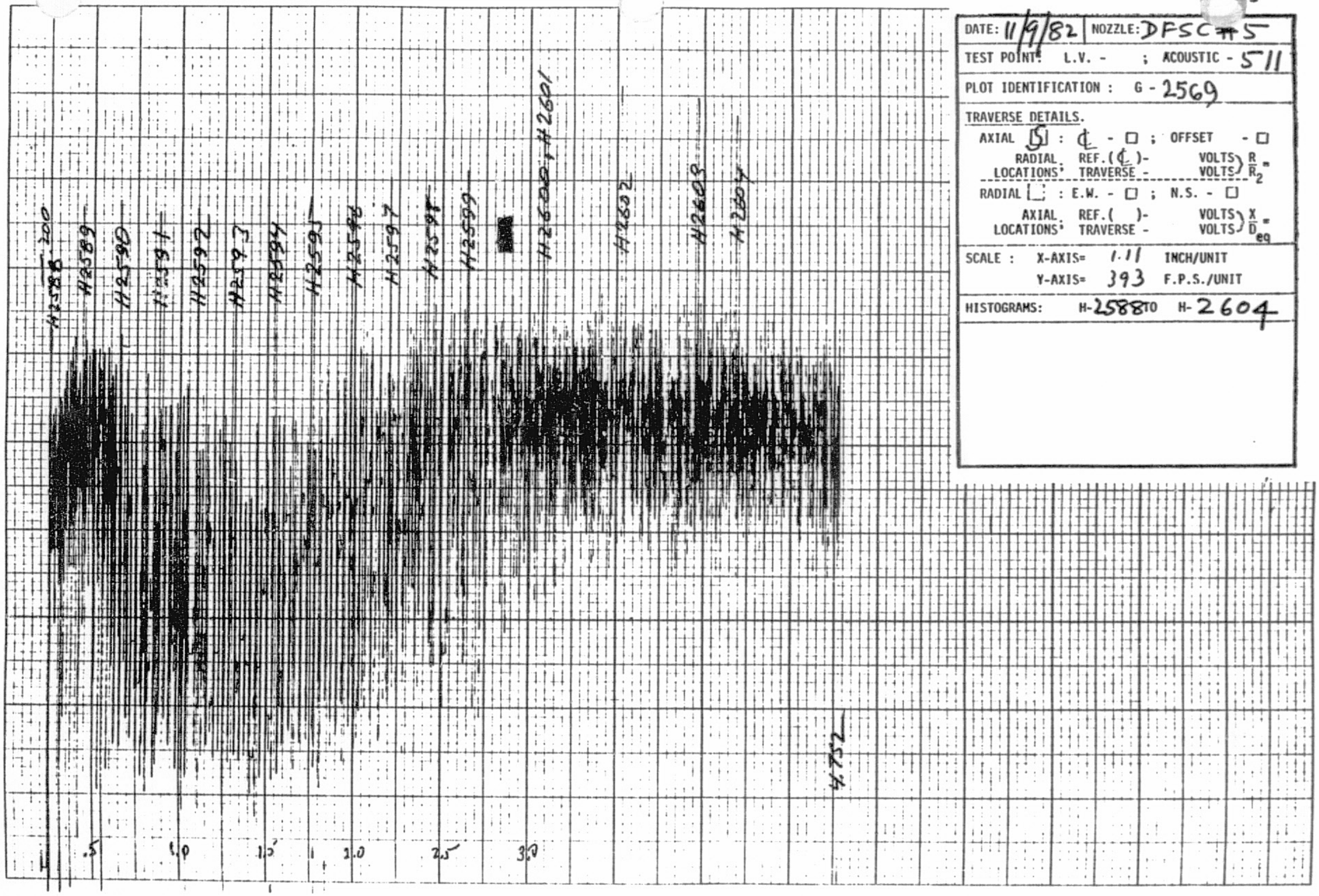
RADIAL [ ] : E.W. - □ ; N.S. - □

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS } X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H-2588 TO H-2604



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916

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DATE: 11/9/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 511	
PLOT IDENTIFICATION : G - 2570	

TRAVERSE DETAILS.

AXIAL ☑ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

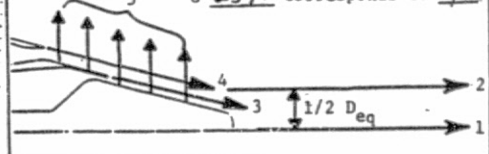
AXIAL LOCATIONS; REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

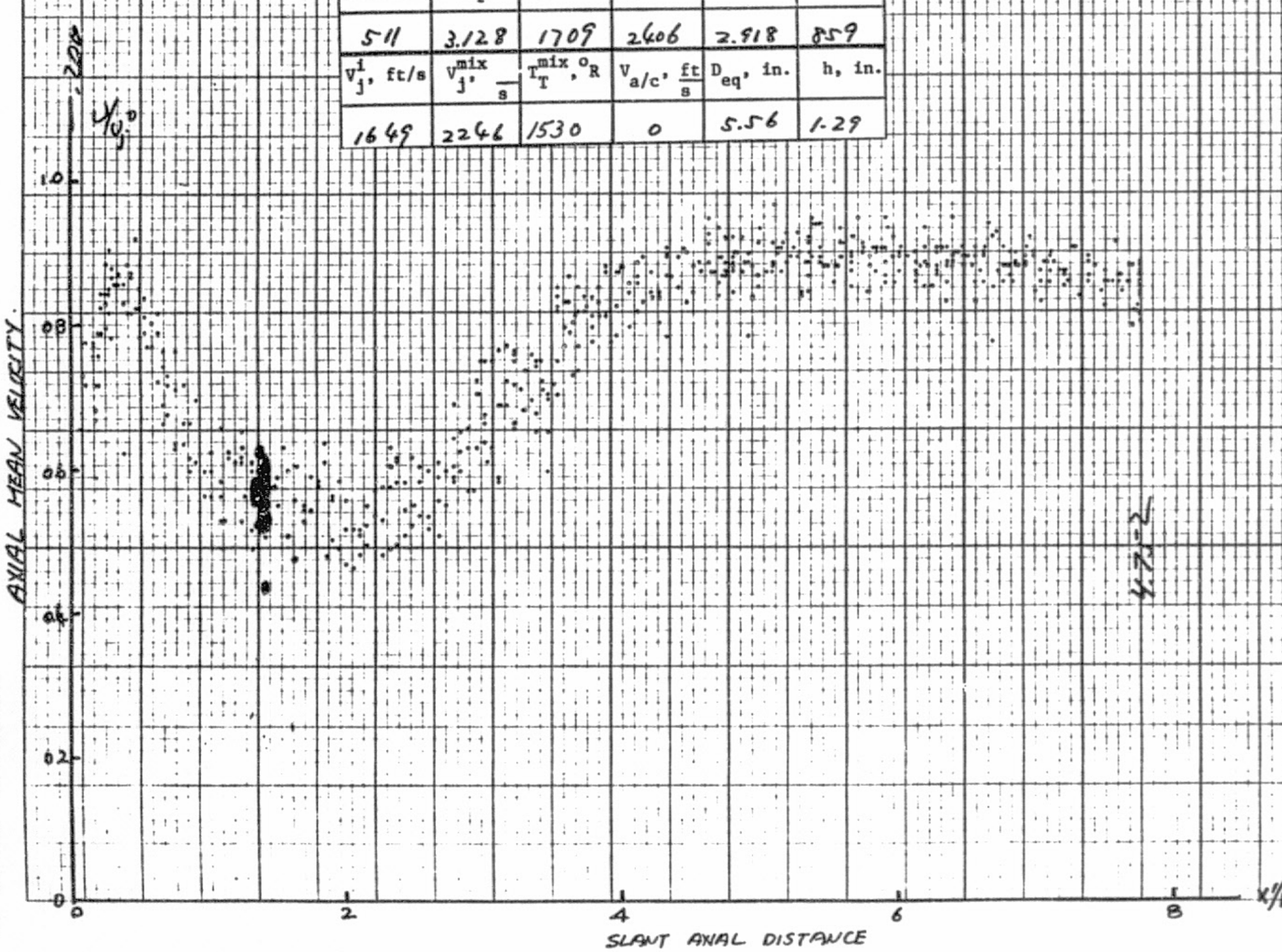
HISTOGRAMS: H- TO H-

G-2570 Corresponds to 4



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
511	3.128	1709	2606	2.918	859
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1649	2246	1530	0	5.56	1.29



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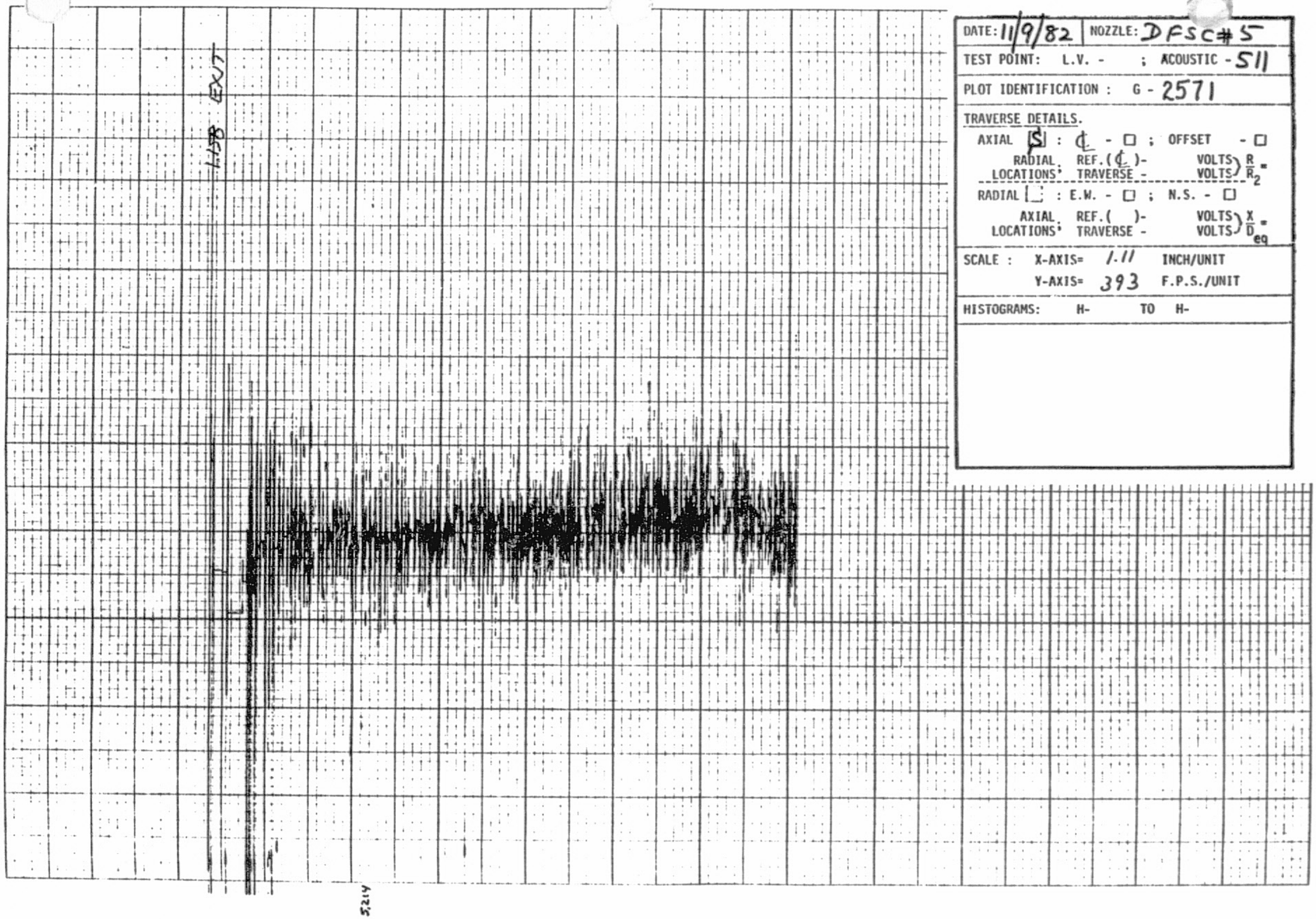

DATE: 11/9/82 NOZZLE: DFSC#5

TEST POINT: L.V. - ; ACOUSTIC - 511

PLOT IDENTIFICATION : G - 2571

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

918

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DATE: 11/9/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 511	
PLOT IDENTIFICATION : G - 2572	

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

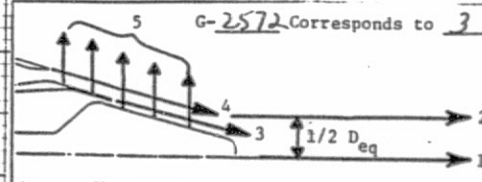
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

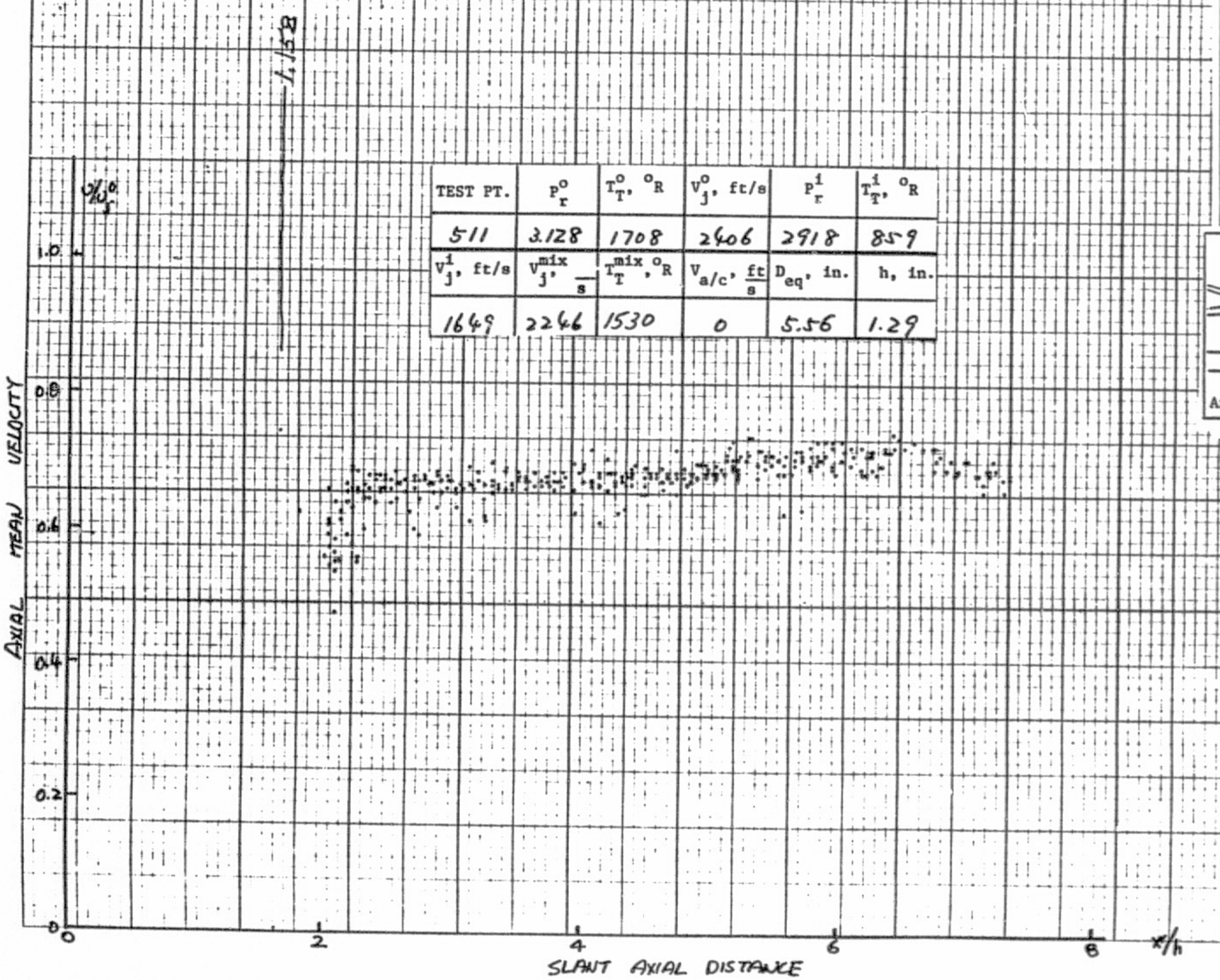
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-2572 Corresponds to 3



Arrows Show LV Traverses



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
511	3.128	1708	2406	2.918	859
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1649	2246	1530	0	5.56	1.29

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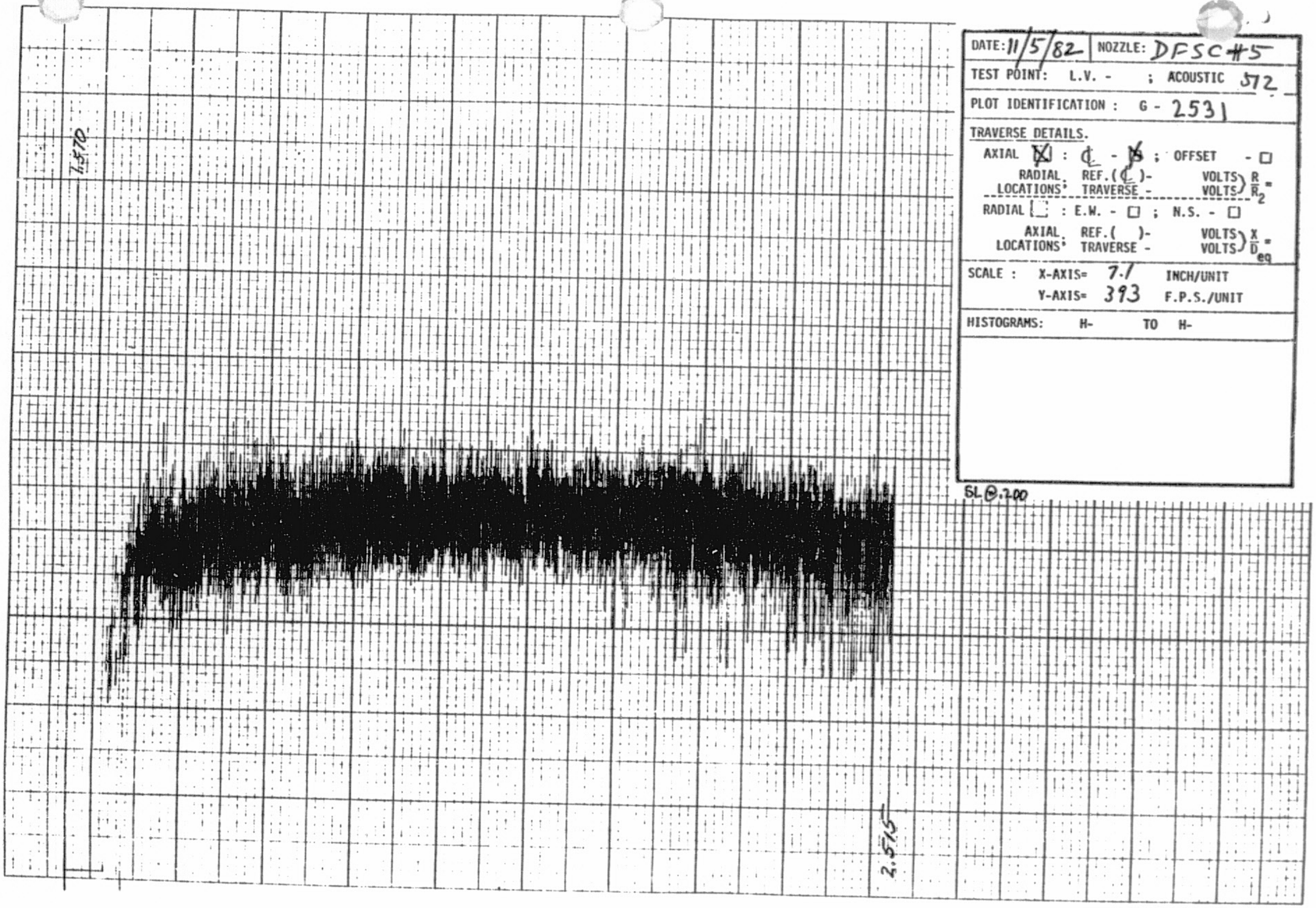
DATE: 11/5/82	NOZZLE: DFSC#5
TEST POINT: L.V. - ; ACOUSTIC 572	
PLOT IDENTIFICATION : G - 2531	
TRAVERSE DETAILS.	
AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐	
RADIAL LOCATIONS: REF.(℄)- TRAVERSE -	VOLTS / VOLTS $) \frac{R}{R_2}$ =
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐	
AXIAL LOCATIONS: REF.( )- TRAVERSE -	VOLTS / VOLTS $) \frac{X}{D_{eq}}$ =
SCALE : X-AXIS= 7.1 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



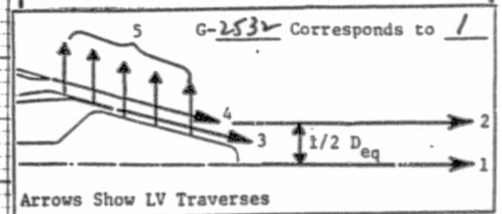
DATE: 11/5/82	NOZZLE: DFSC#5
TEST POINT: L.V. - ; ACOUSTIC - 512	
PLOT IDENTIFICATION : G - 2532	

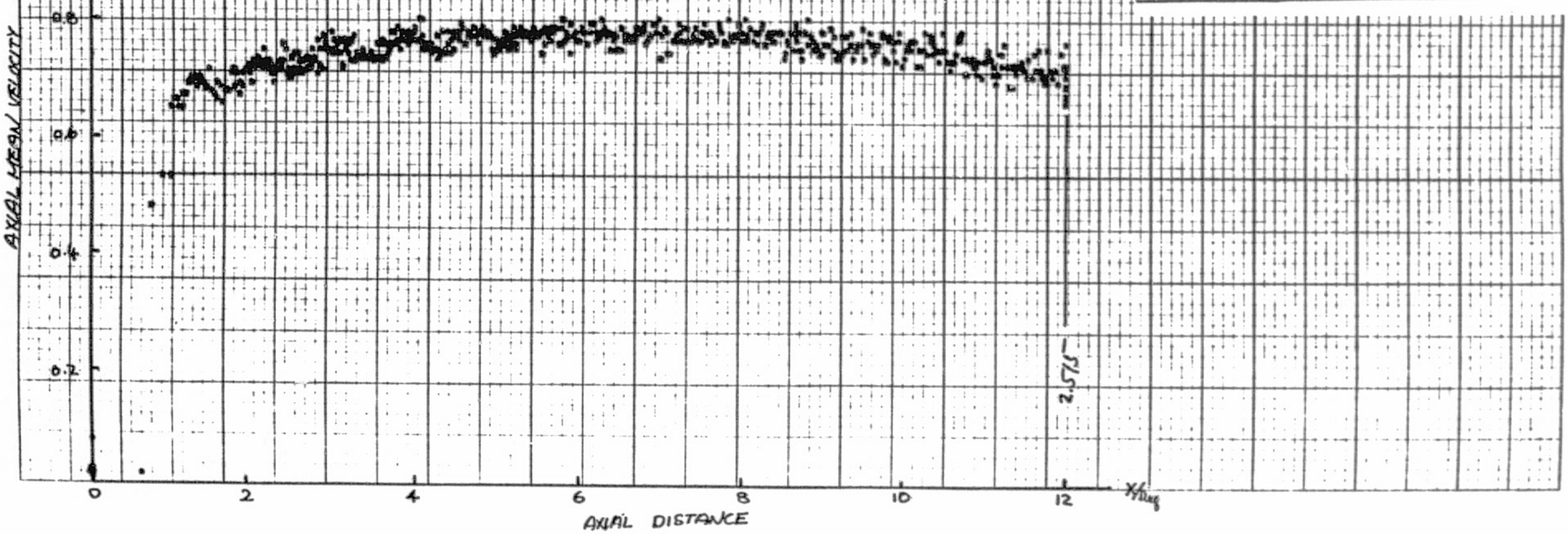
TRAVERSE DETAILS.
AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
512	3.120	1651	2361	2.910	848
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1637	2209	1483	400	5.56	1.29





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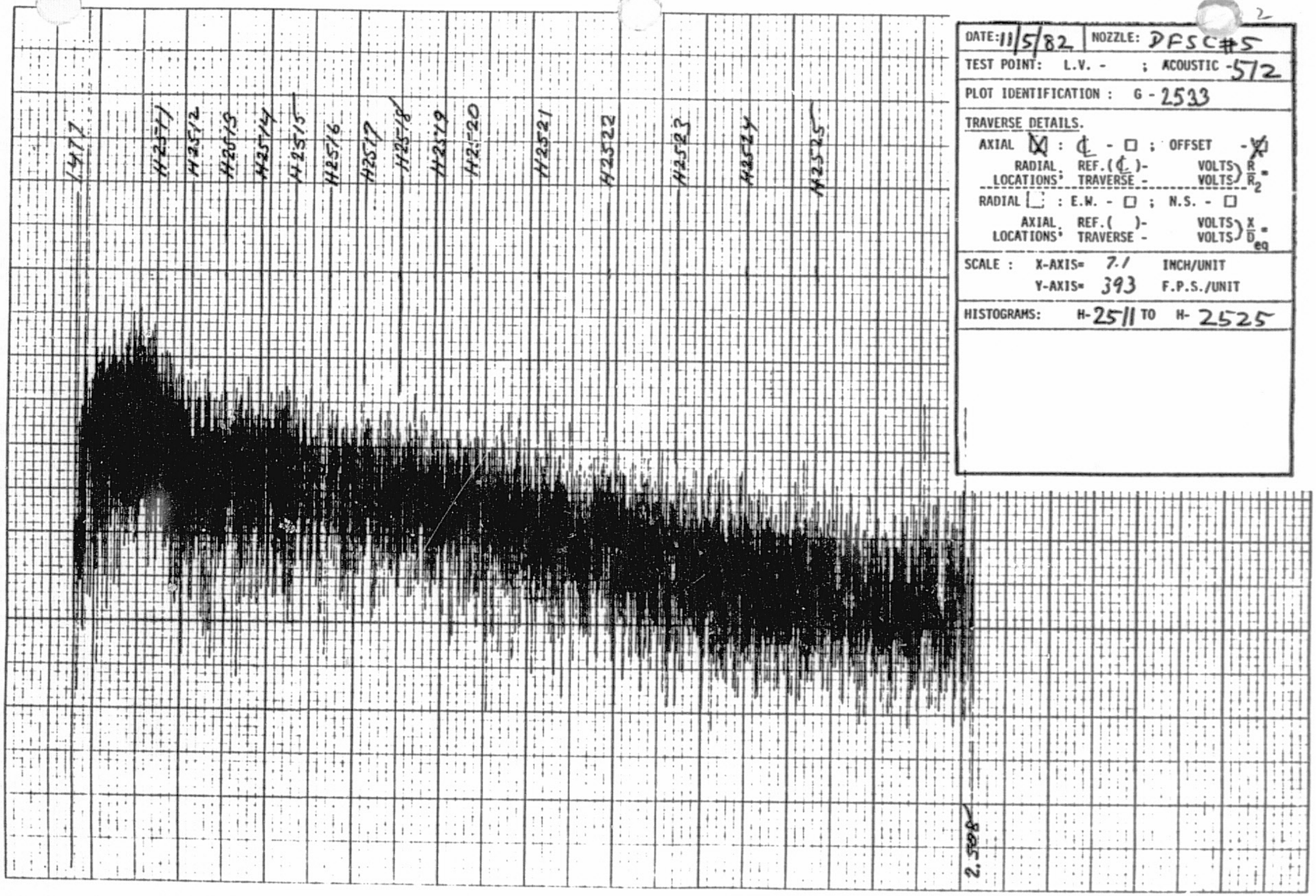

2

DATE: 11/5/82	NOZZLE: DFSC#5
TEST POINT: L.V. - ; ACOUSTIC -572	
PLOT IDENTIFICATION : G - 2533	
TRAVERSE DETAILS.	
AXIAL ☒ : ℄ - □ ; OFFSET - X	
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =	
RADIAL □ : E.W. - □ ; N.S. - □	
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =	
SCALE : X-AXIS= 7.1 INCH/UNIT; Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H-2511 TO H-2525	

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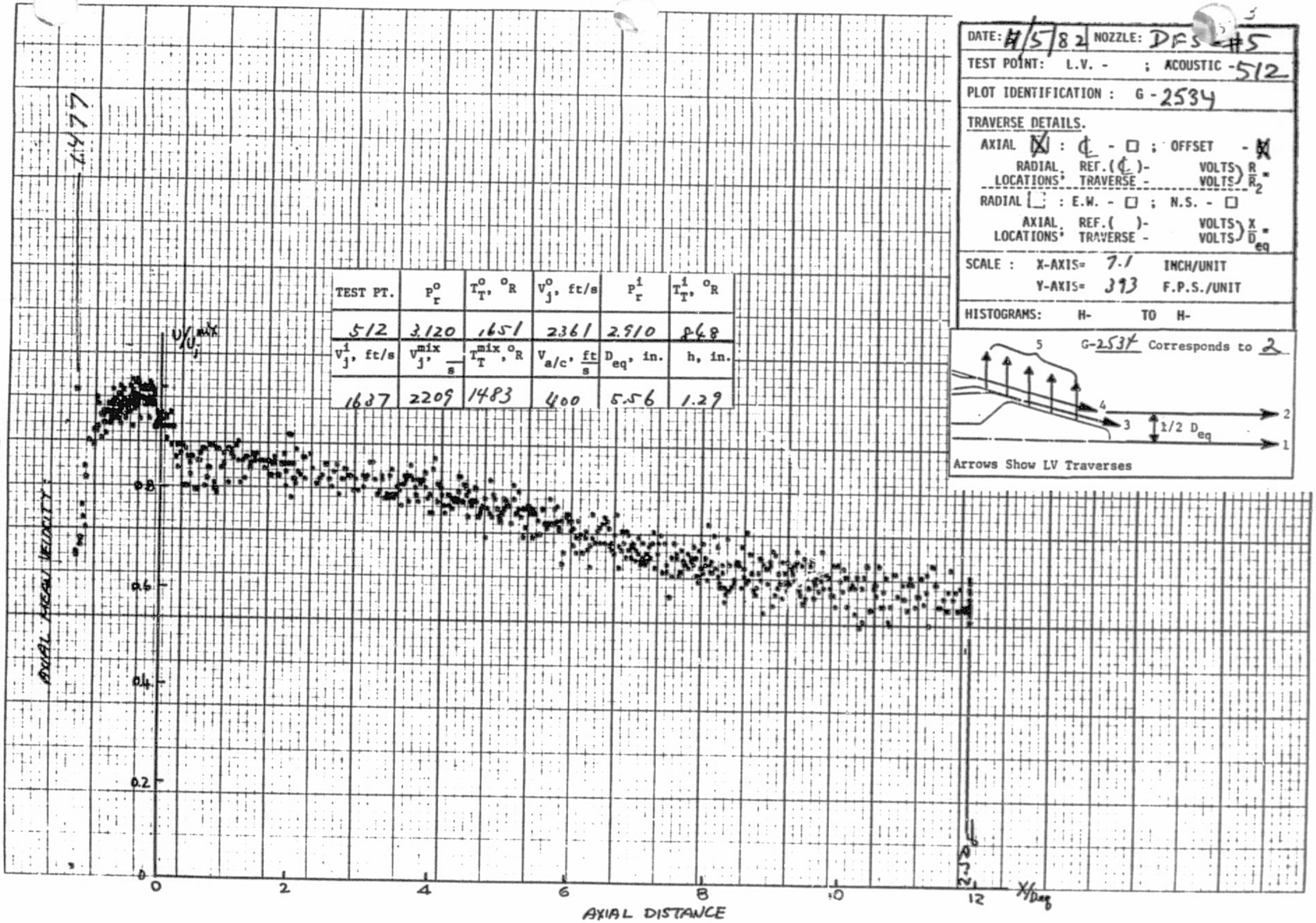

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923

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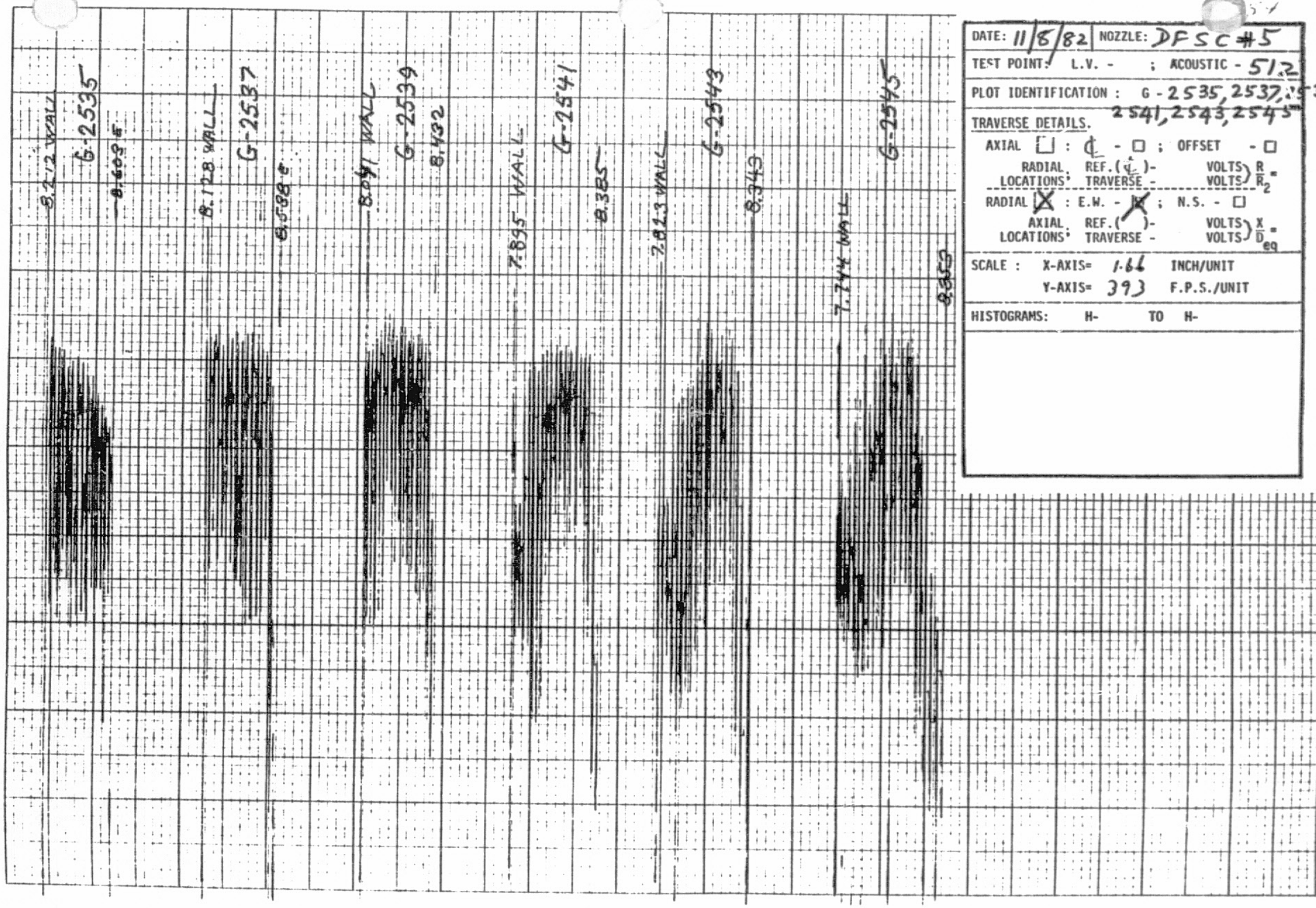

DATE: 11/8/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 512

PLOT IDENTIFICATION : G - 2535, 2537, 2539, 2541, 2543, 2545

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

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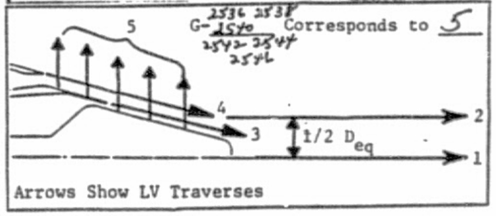
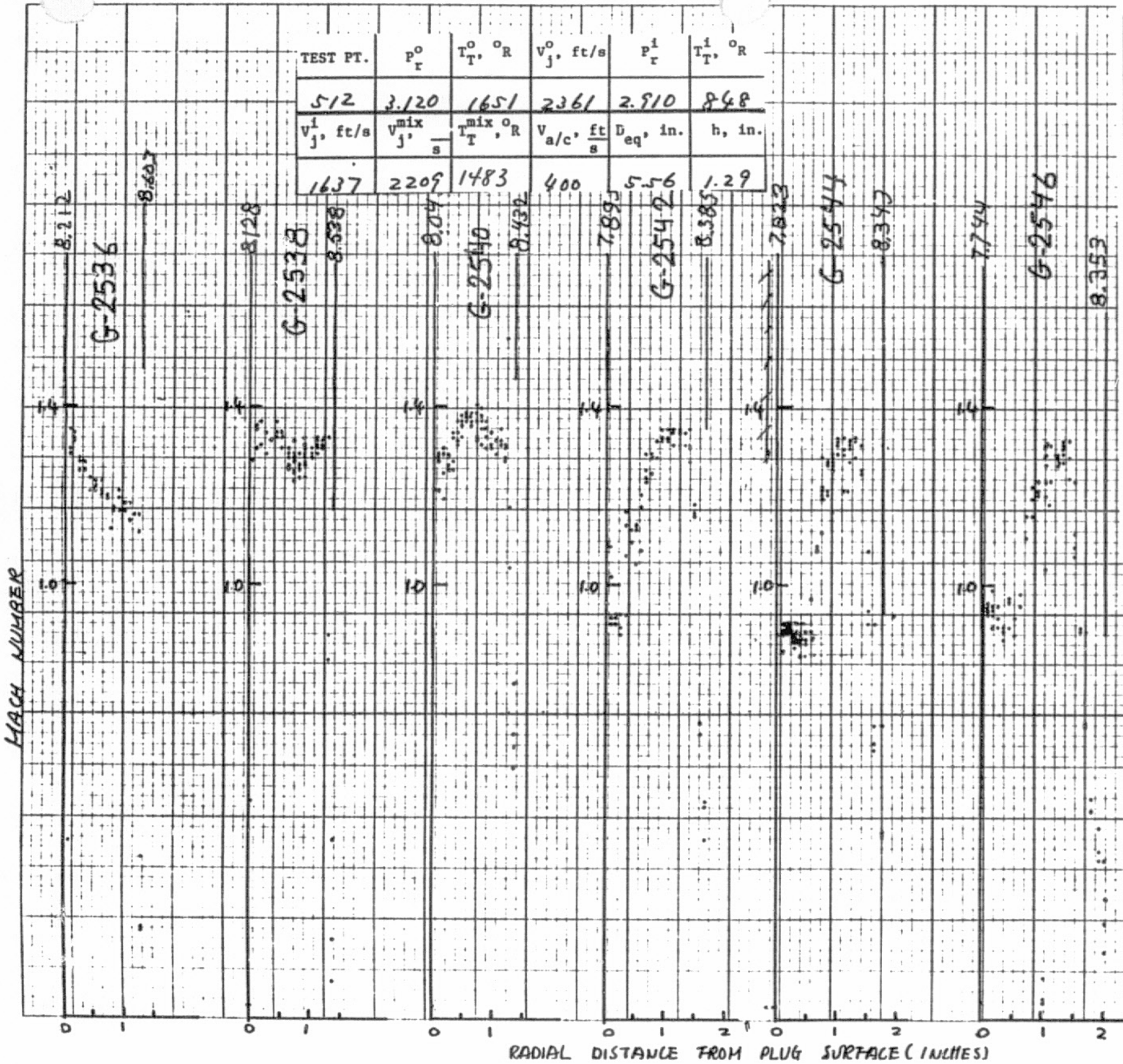
TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
512	3.120	1651	2361	2.910	848
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1637	2209	1483	400	5.56	1.29

DATE: 11/8/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 512	
PLOT IDENTIFICATION : G - 2536, 2538, 2540, 2542, 2544, 2546	
TRAVERSE DETAILS.	
AXIAL [ ] : ℄ - ☐ ; OFFSET - ☐	
RADIAL LOCATIONS: REF. (℄)- TRAVERSE -	VOLTS/VOLTS) R/R_2 =
RADIAL [X] : E.W. - [X] ; N.S. - ☐	
AXIAL LOCATIONS: REF. ( )- TRAVERSE -	VOLTS/VOLTS) X/D_{eq} =
SCALE : X-AXIS= 1.66 INCH/UNIT	Y-AXIS= 393 F.P.S./UNIT
HISTOGRAMS: H- TO H-	



Arrows Show LV Traverses



925

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926

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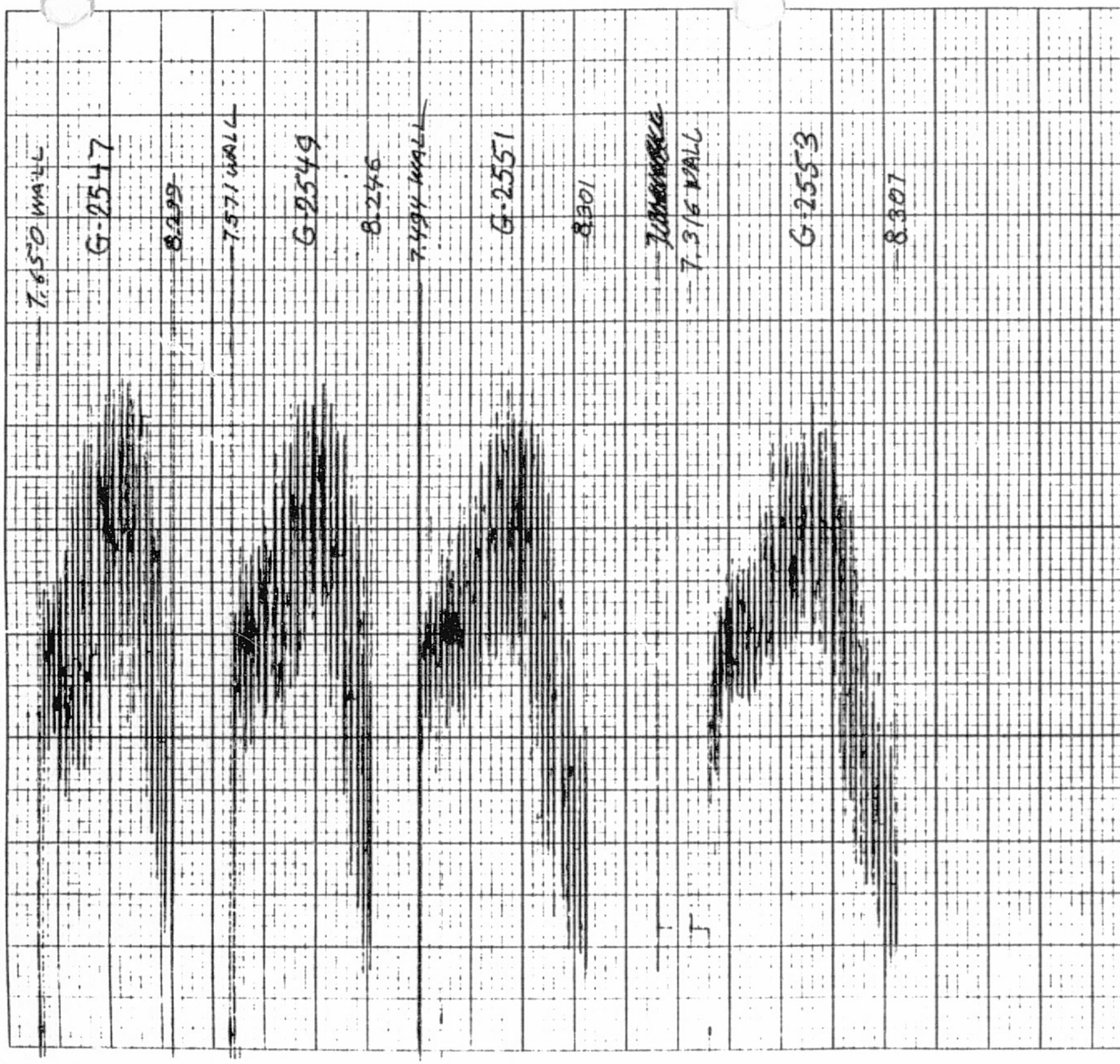

DATE: 11/8/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 5/2	
PLOT IDENTIFICATION : G - 2547, 2549, 2551, 2553	
TRAVERSE DETAILS.	
AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐	
RADIAL LOCATIONS: REF.(℄)- TRAVERSE -	VOLTS/VOLTS R/R_2 =
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐	
AXIAL LOCATIONS: REF.( )- TRAVERSE -	VOLTS/VOLTS X/D_{eq} =
SCALE : X-AXIS= 1.66 INCH/UNIT	Y-AXIS= 393 F.P.S./UNIT
HISTOGRAMS: H- TO H-	

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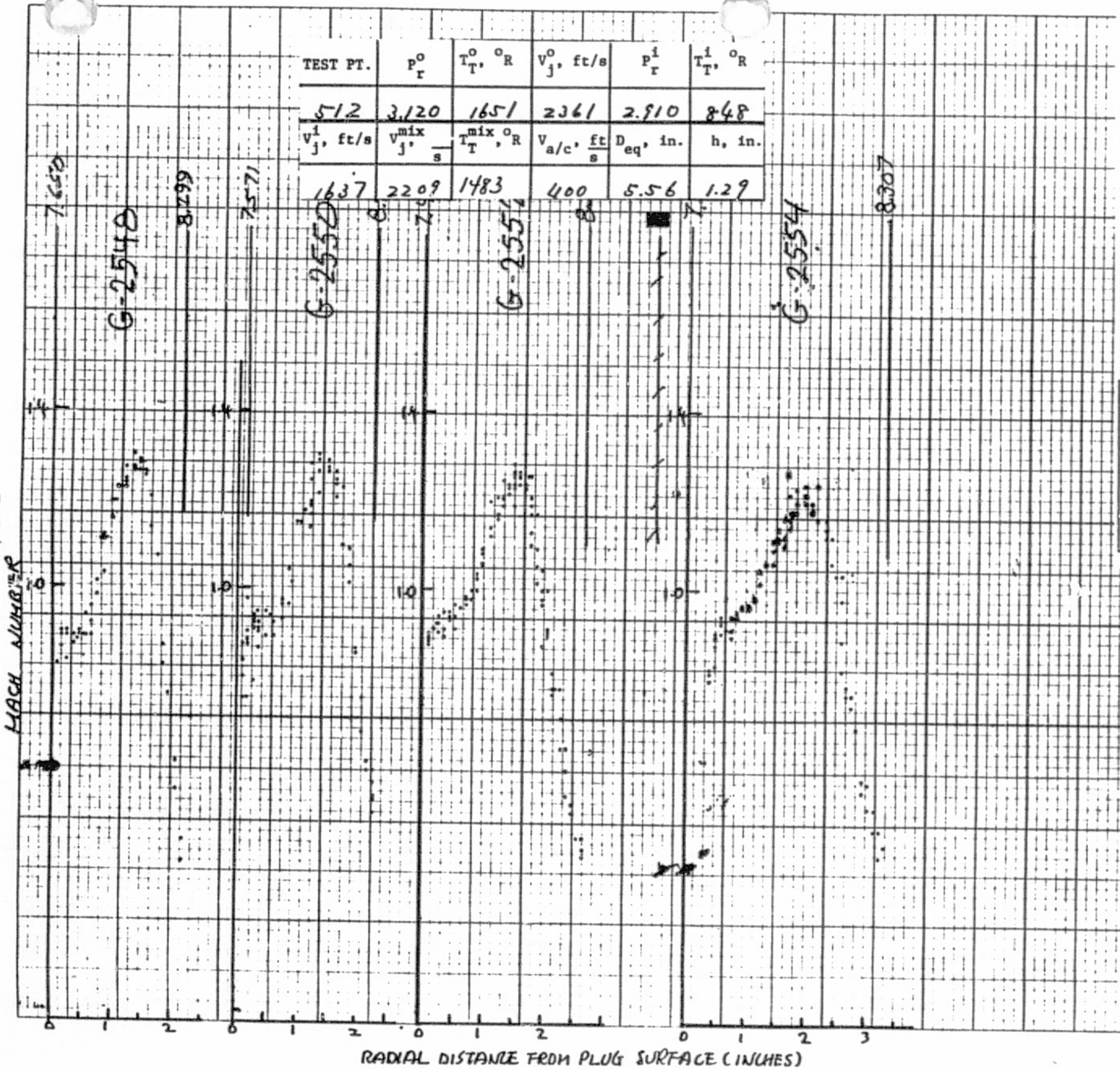
TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
512	3.120	1651	2361	2.910	848
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1637	2209	1483	400	5.56	1.29



DATE: 11/8/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 512

PLOT IDENTIFICATION : G - 2548, 2550, 2552, 2554

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS) R/R_2 =

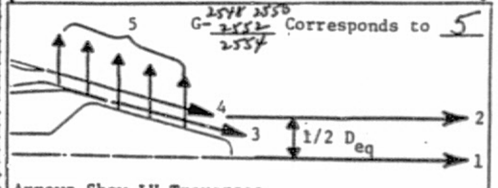
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



Arrows Show LV Traverses

927

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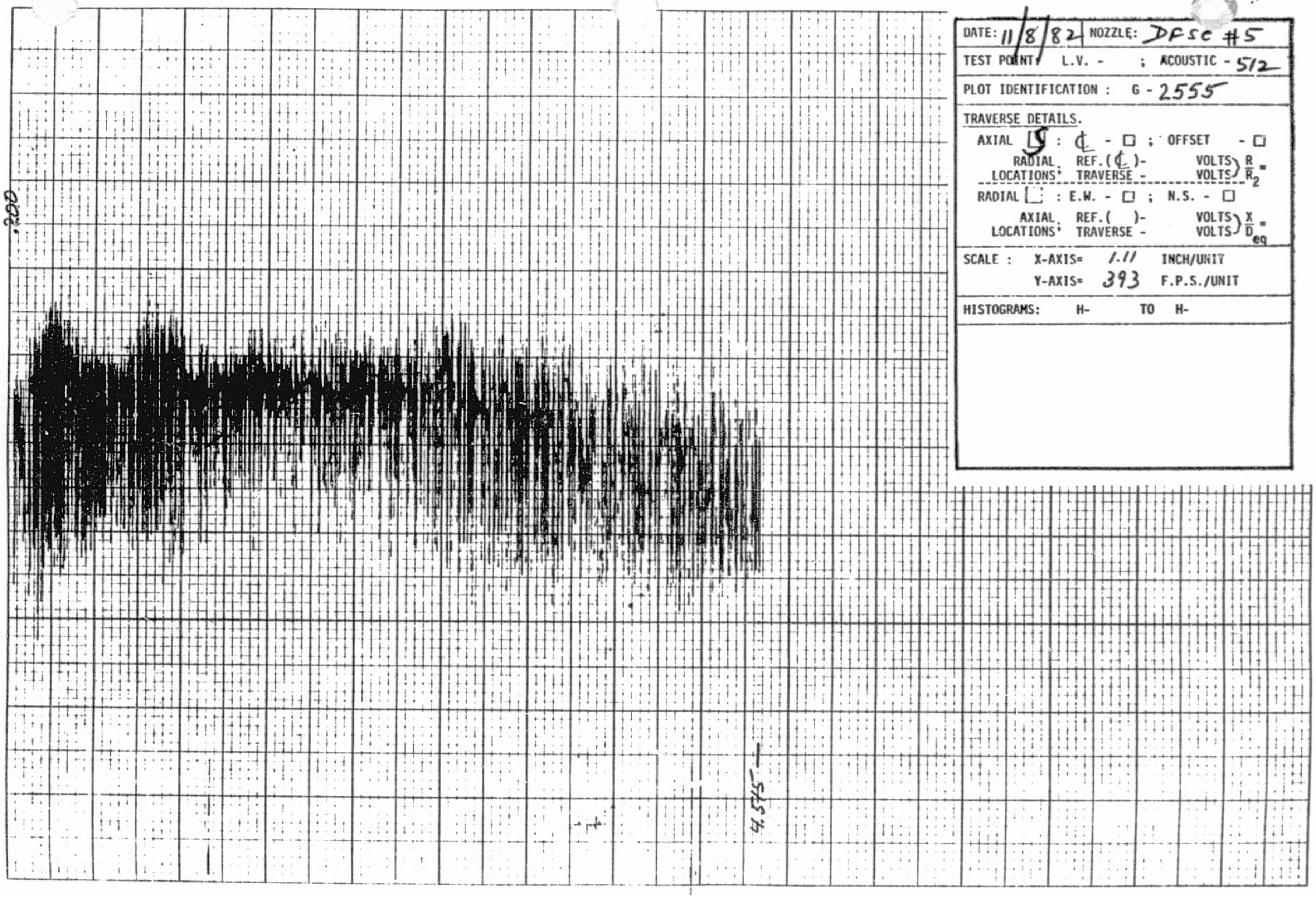

DATE: 11/8/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 512

PLOT IDENTIFICATION : G - 2555

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

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TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
512	3.120	1651	2361	2.910	848
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1637	2209	1483	400	5.56	1.29

DATE: 11/8/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 512

PLOT IDENTIFICATION : G - 2556

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

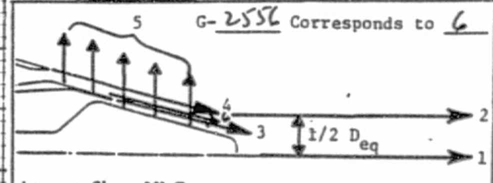
AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

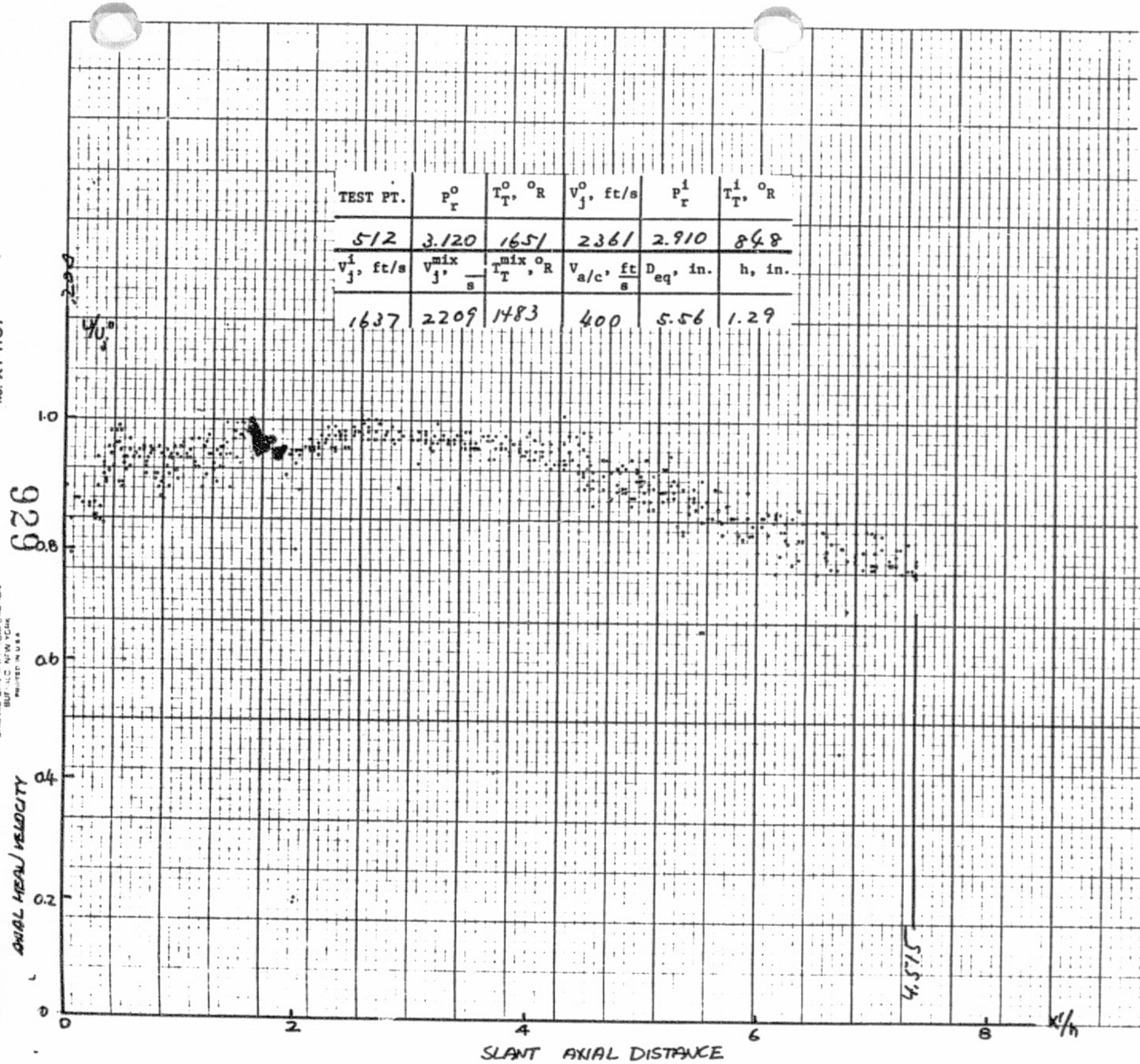
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

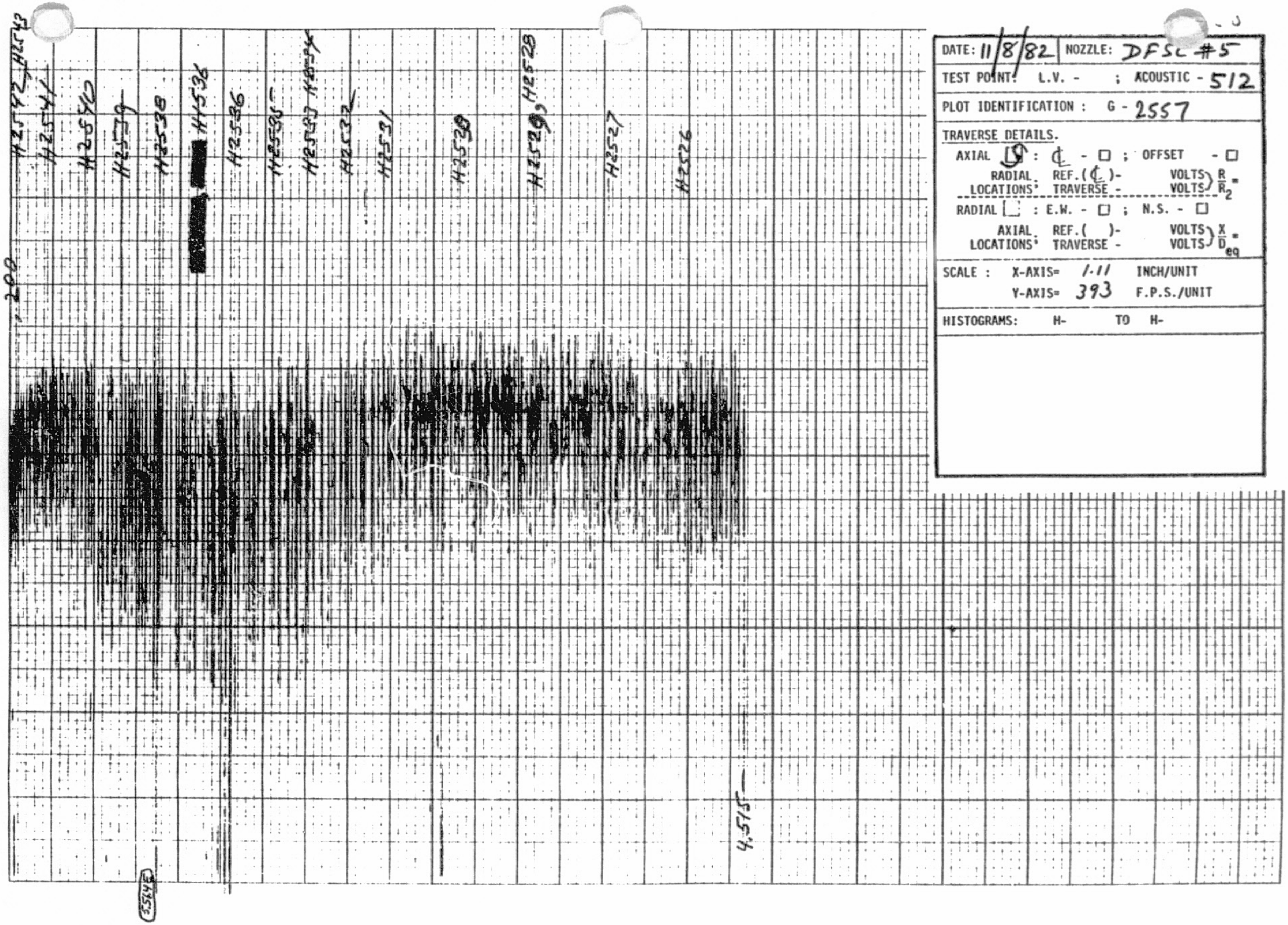
G-2556 Corresponds to 6



Arrows Show LV Traverses



929



No. XY 1101

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TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
512	3.120	1651	2361	2.910	848
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1637	2209	1483	400	5.56	1.29

DATE: 11/8/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 512

PLOT IDENTIFICATION : G - 2558

TRAVERSE DETAILS.

AXIAL [x] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS) R/R_2 =

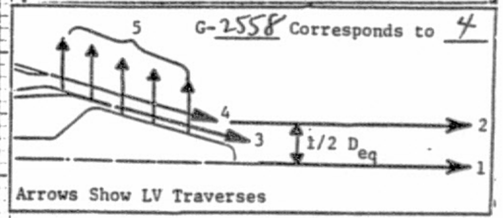
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

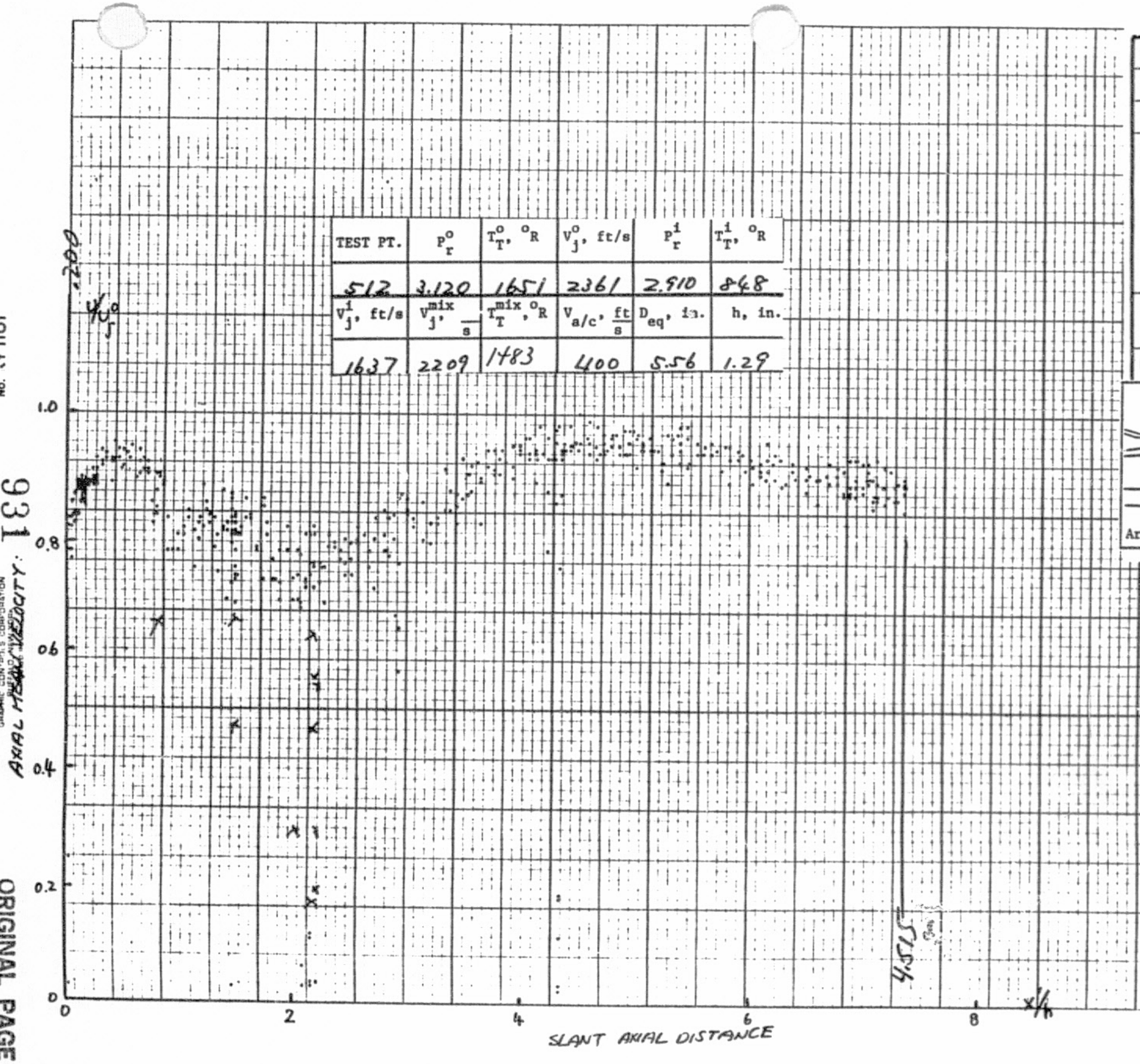
AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

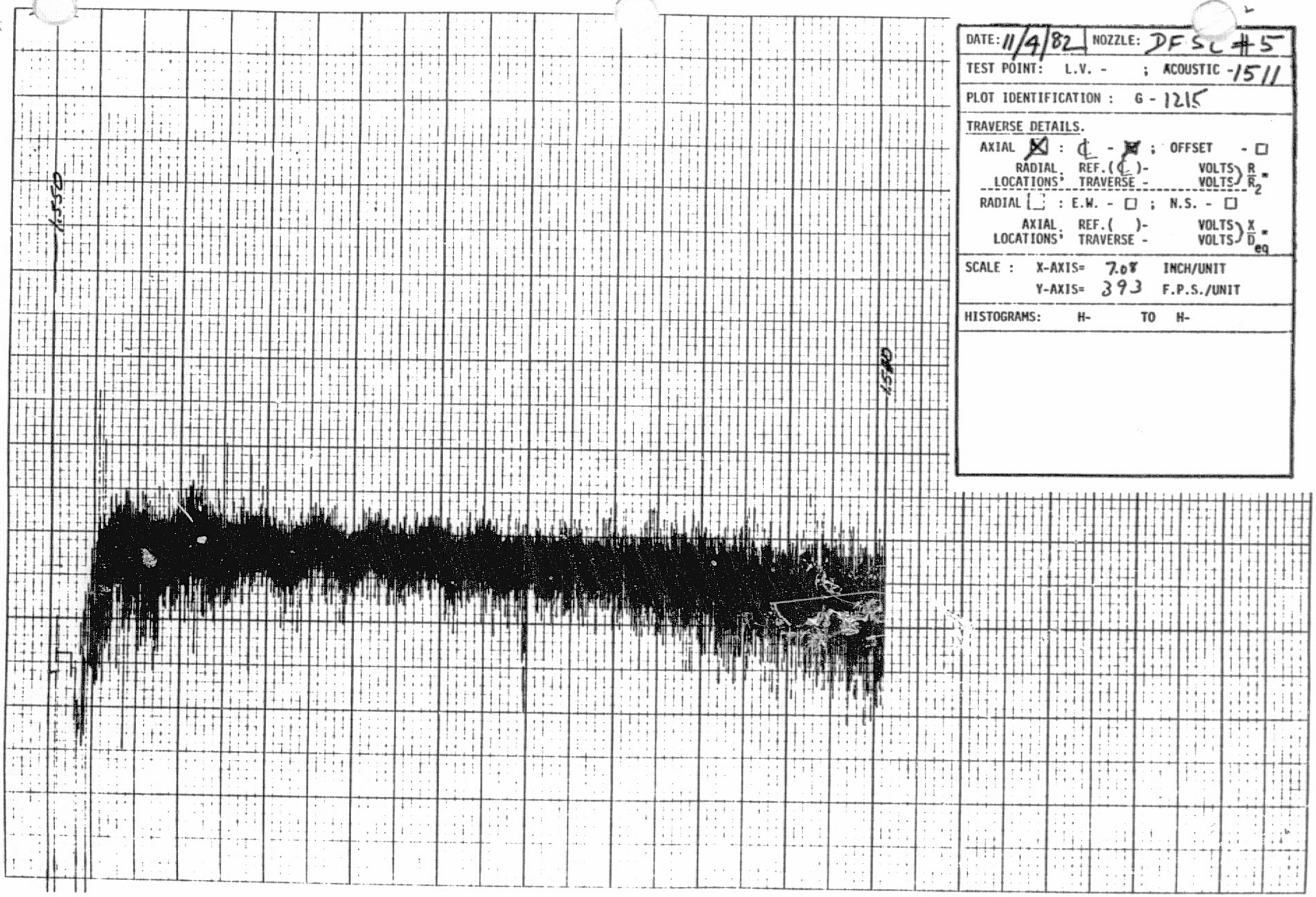
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-







DATE: 11/4/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 1511

PLOT IDENTIFICATION : G - 1215

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

932

DATE: 11/4/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 1511	
PLOT IDENTIFICATION : G - 1216	

TRAVERSE DETAILS.

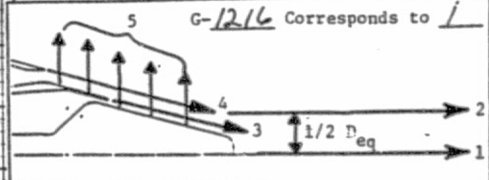
AXIAL [X] : ℄ - [X] ; OFFSET - [ ]
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS)/VOLTS) $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - [ ] ; N.S. - [ ]
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS)/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

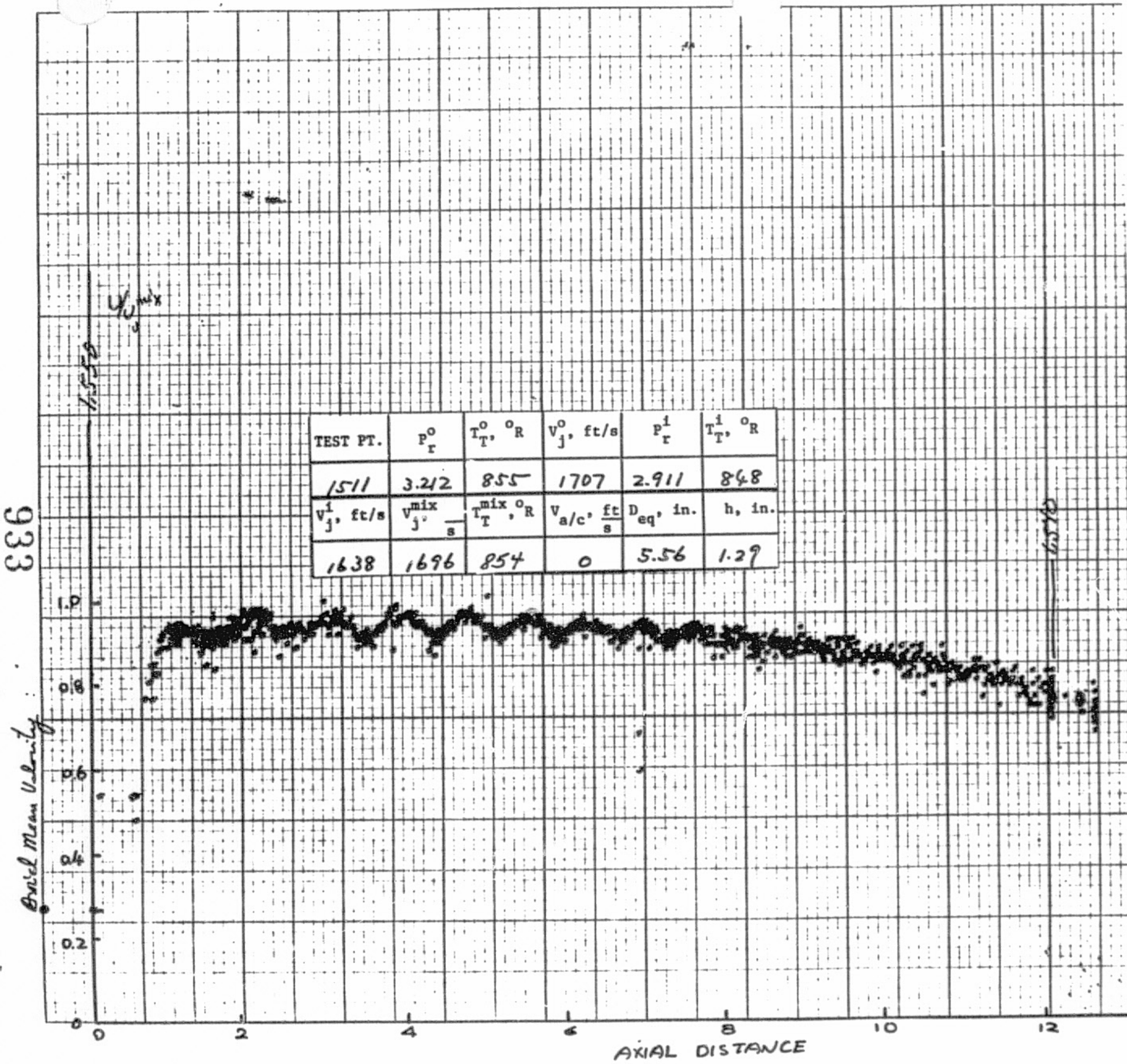
HISTOGRAMS: H- TO H-

G-1216 Corresponds to 1



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1511	3.212	855	1707	2.911	848
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1638	1696	854	0	5.56	1.29



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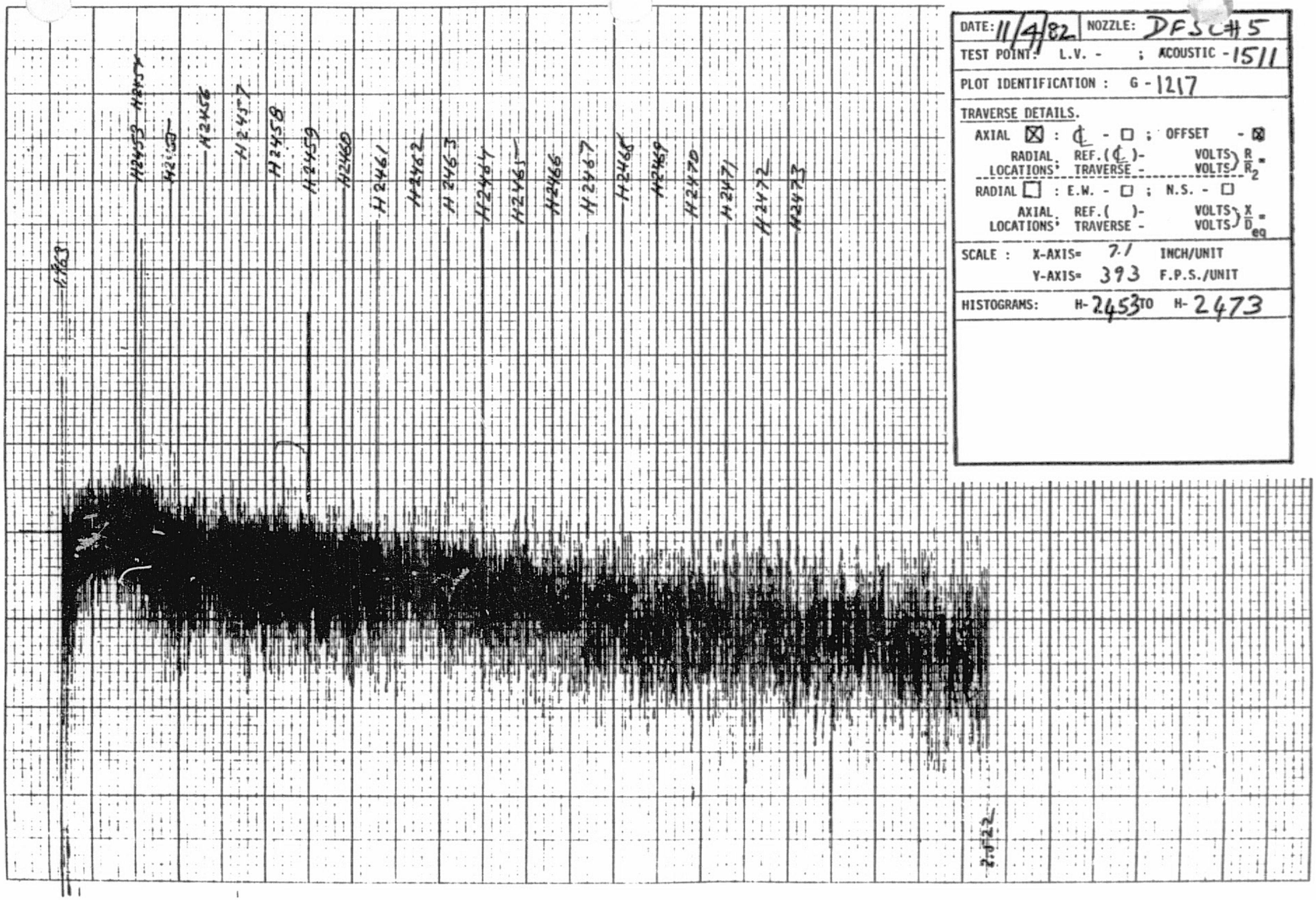

DATE: 11/4/82	NOZZLE: DFSC#5
TEST POINT: L.V. - ; ACOUSTIC - 1511	
PLOT IDENTIFICATION : G - 1217	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H-2453 TO H-2473

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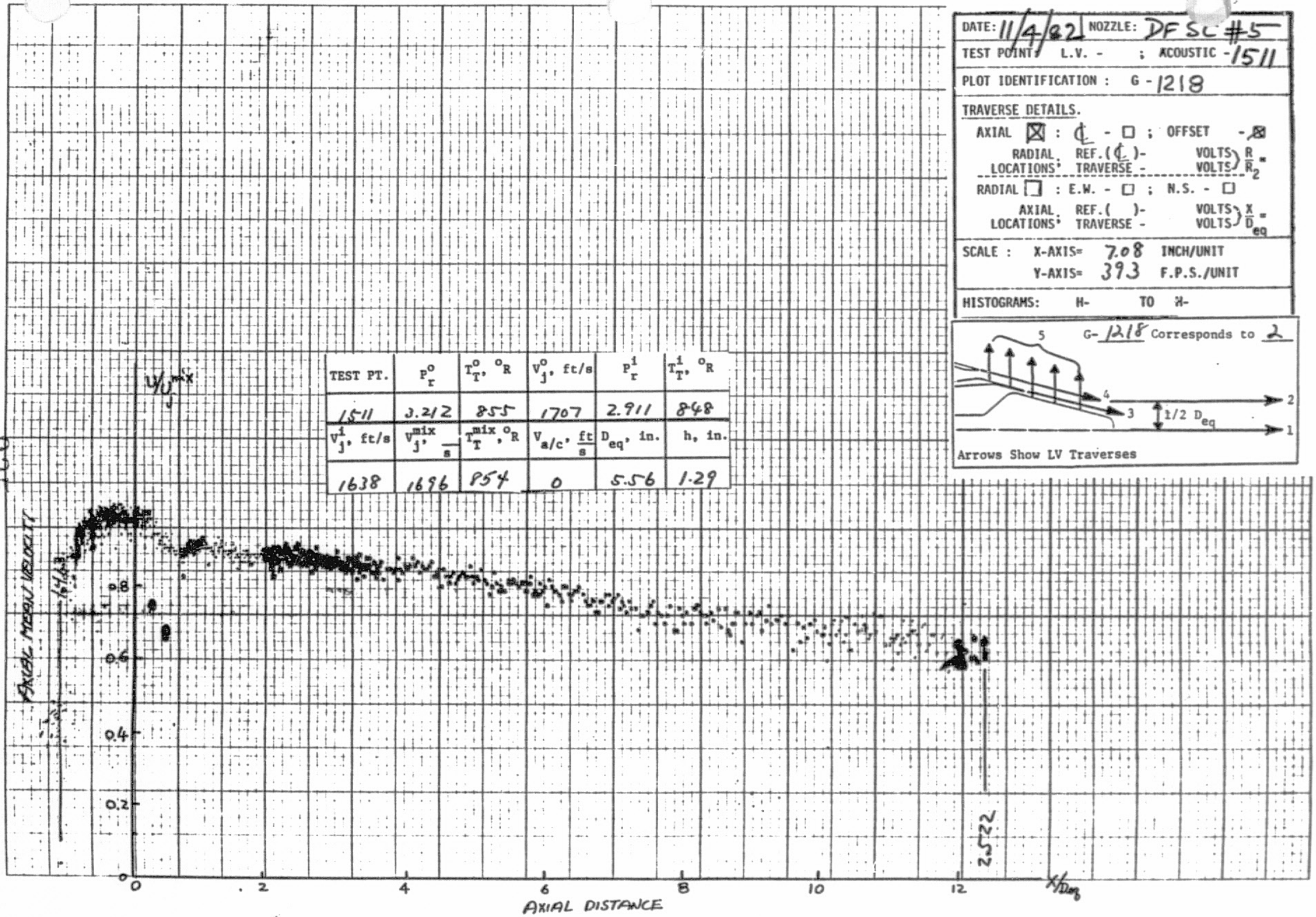

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1511	3.212	855	1707	2.911	848
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1638	1696	854	0	5.56	1.29

No. XY 1101

935

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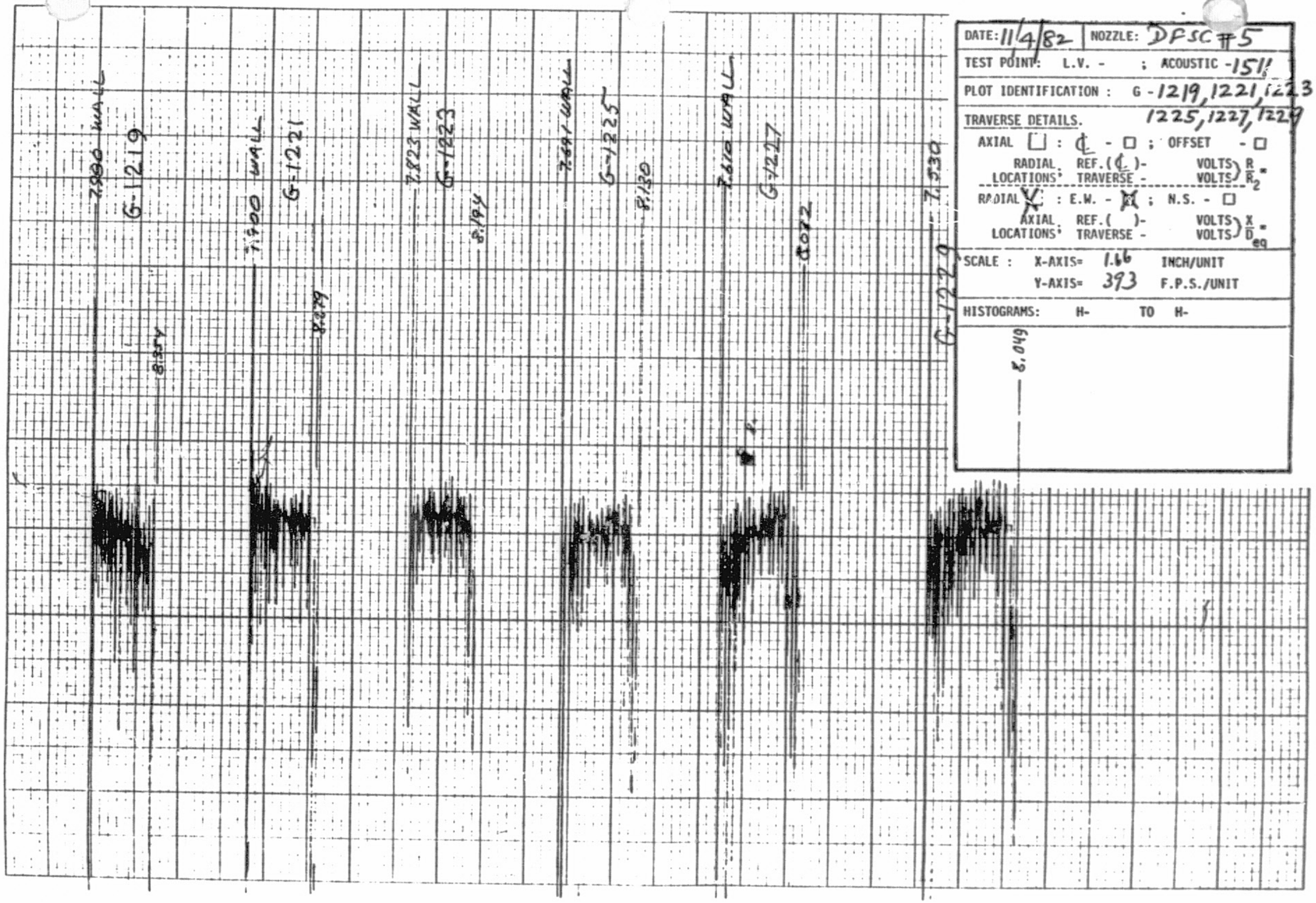

DATE: 11/4/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC -151

PLOT IDENTIFICATION : G - 1219, 1221, 1223, 1225, 1227, 1229

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ✓ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

936

No. XY 1101

ORIGINAL PAGE IS
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DATE: 11/4/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 1511

PLOT IDENTIFICATION : G - 1220, 1221, 1224, 1226, 1228, 1230

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

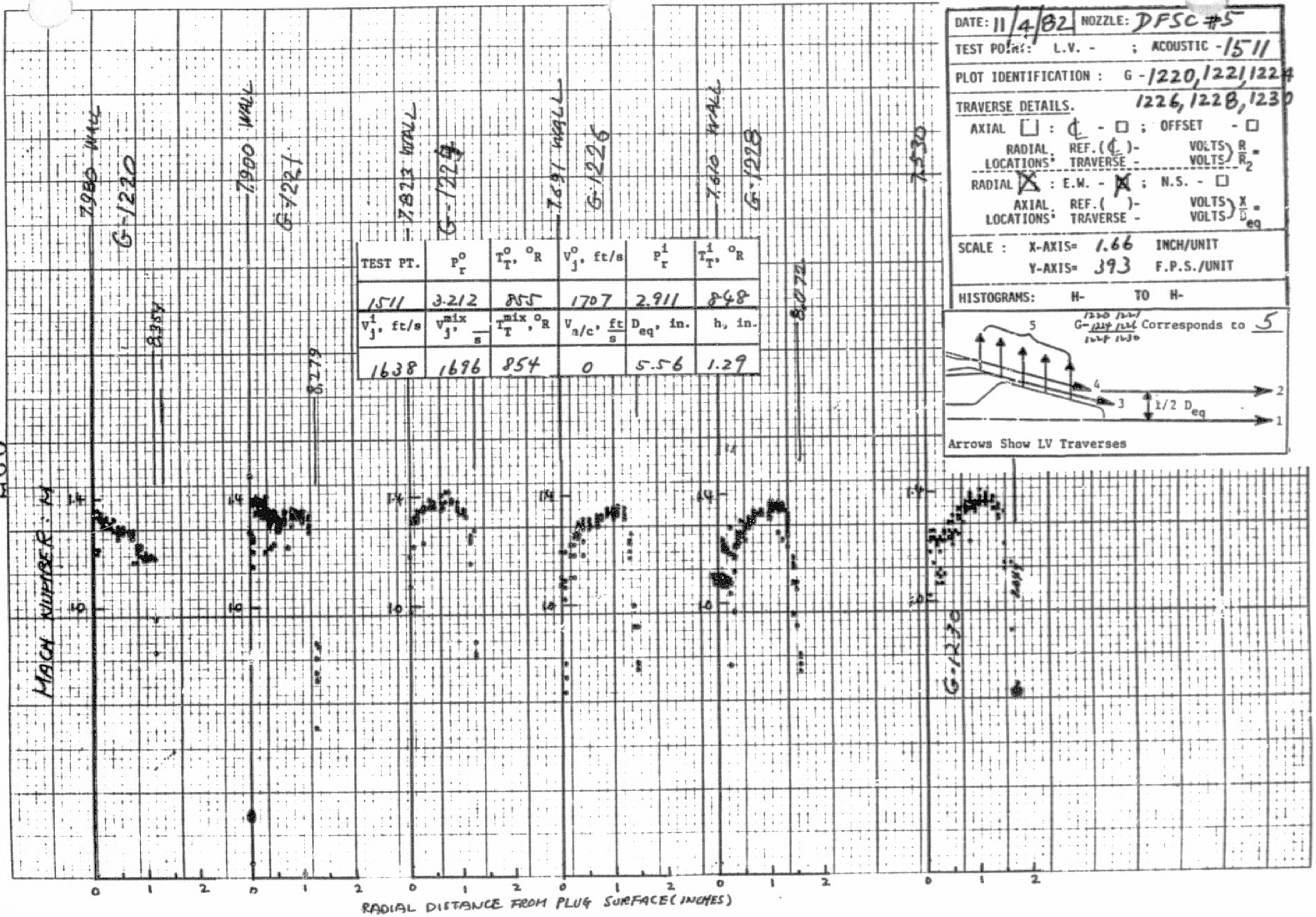
AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1511	3.212	855	1707	2.911	848
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1638	1696	854	0	5.56	1.29



937

No. XY 1101

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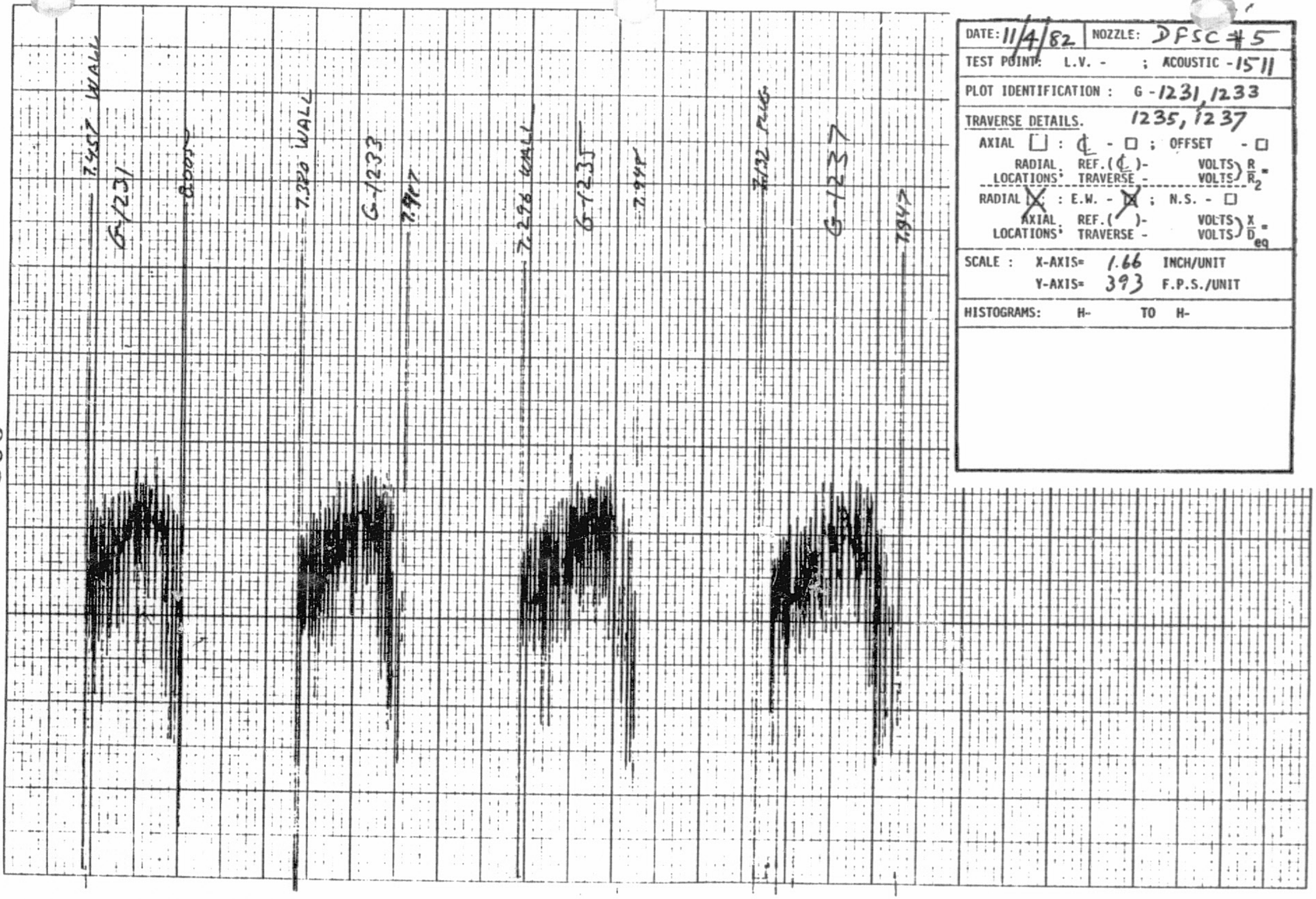

DATE: 11/4/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 1511

PLOT IDENTIFICATION : G - 1231, 1233, 1235, 1237

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

938

NO. XY 1101

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TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1511	3.212	855	1707	2.911	848
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1638	1696	854	0	5.56	1.29

DATE: 11/4/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 1511

PLOT IDENTIFICATION : G - 1232, 1234, 1236, 1238

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS X/D_{eq} =

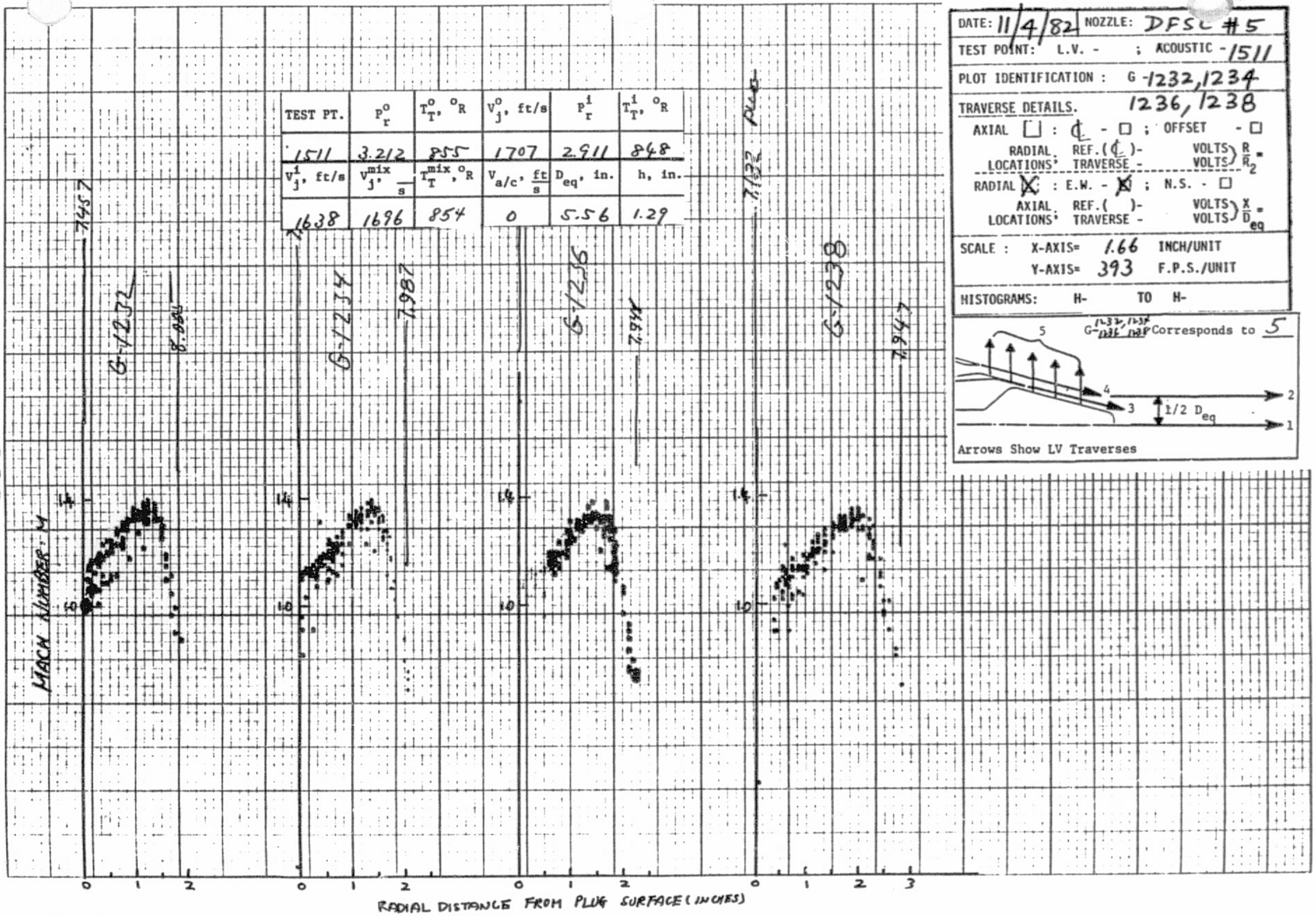
SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1232, 1234, 1236, 1238 Corresponds to 5

Arrows Show LV Traverses



939

No. XY 1101

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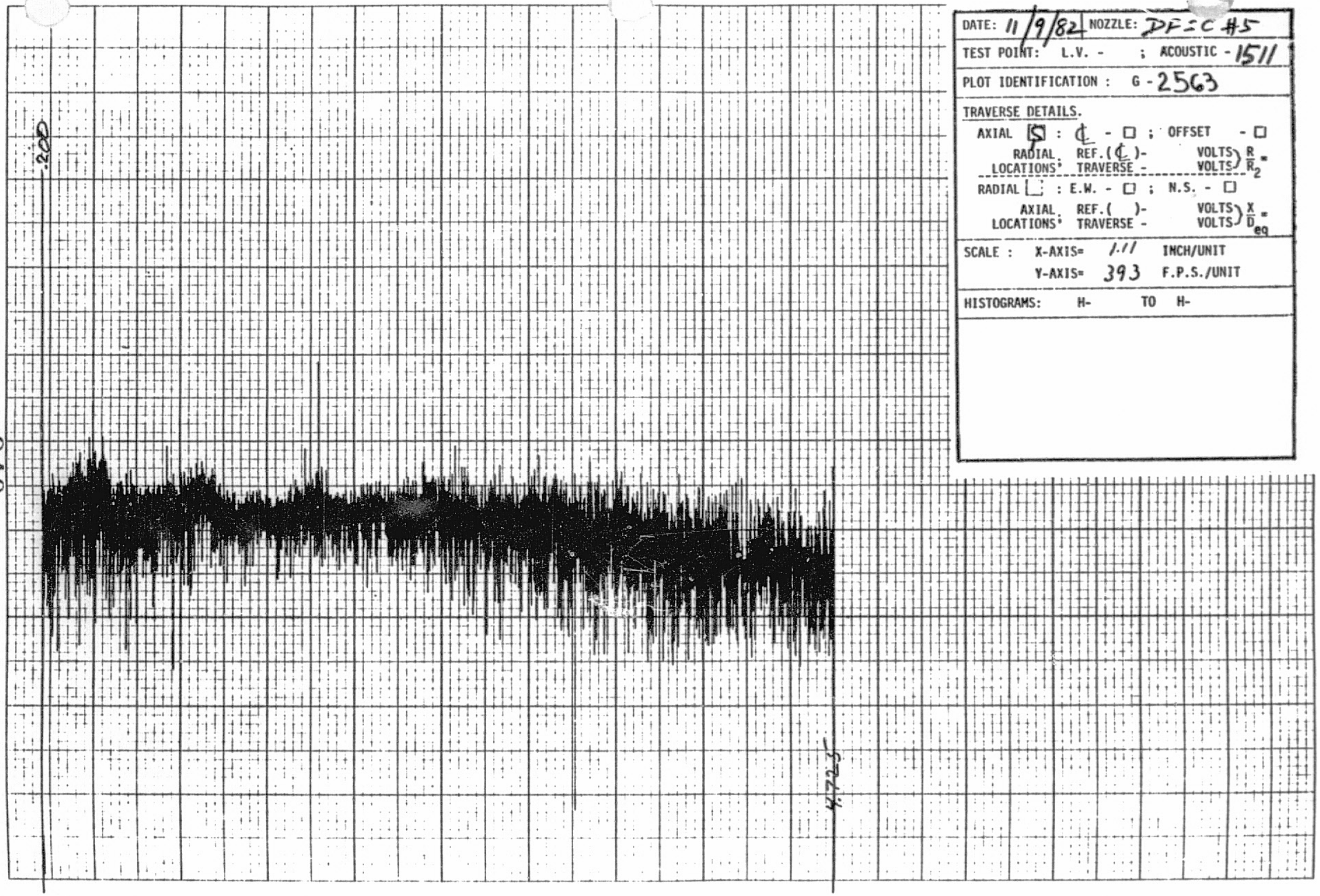

No. XY 1101

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DATE: 11/9/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 1511	
PLOT IDENTIFICATION : G - 2564	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

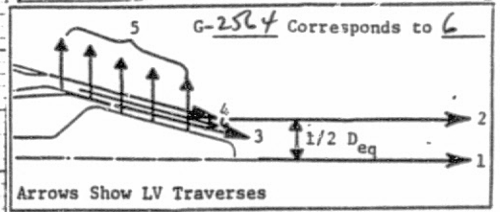
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

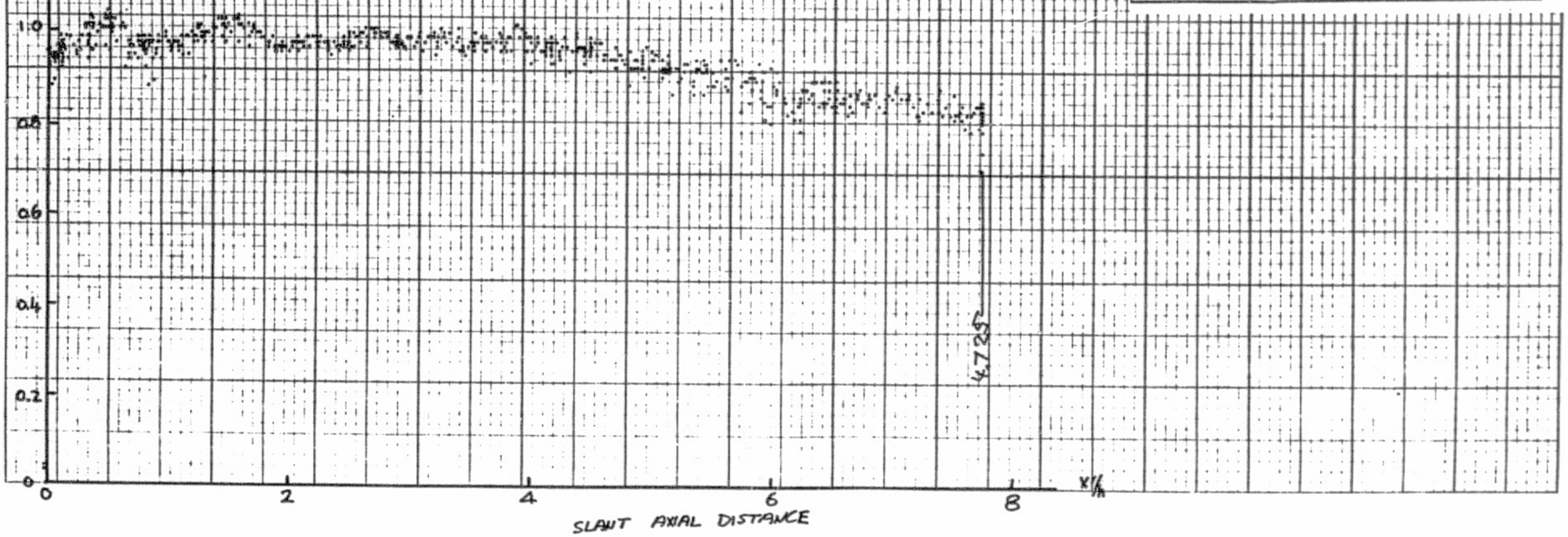
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1511	3.212	855	1707	2.911	848
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1638	1696	854	0	5.56	1.29





941

No. XY 1101

ORIGINAL PAGE IS OF POOR QUALITY

DATE: 11/9/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 1511	
PLOT IDENTIFICATION : G - 2565	

TRAVERSE DETAILS.

AXIAL [5] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

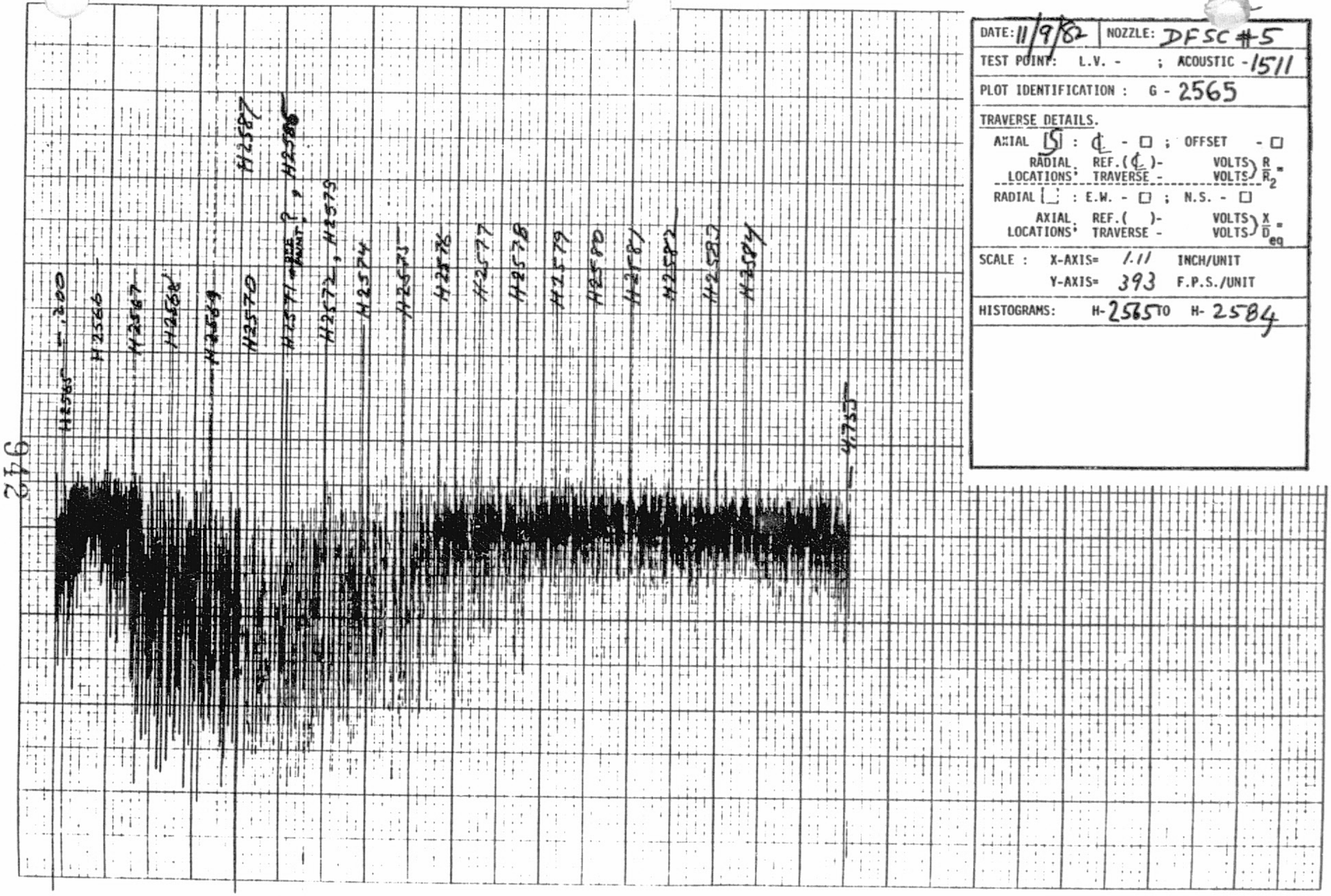
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H-2565 TO H-2584



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DATE: 11/9/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 1511	
PLOT IDENTIFICATION : G - 2566	

TRAVERSE DETAILS.

AXIAL [5] : ℄ - □ ; OFFSET - □

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - □ ; N.S. - □

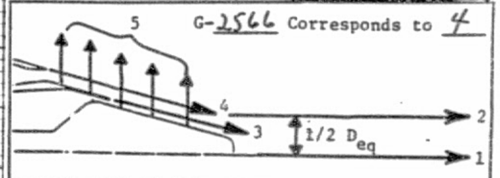
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

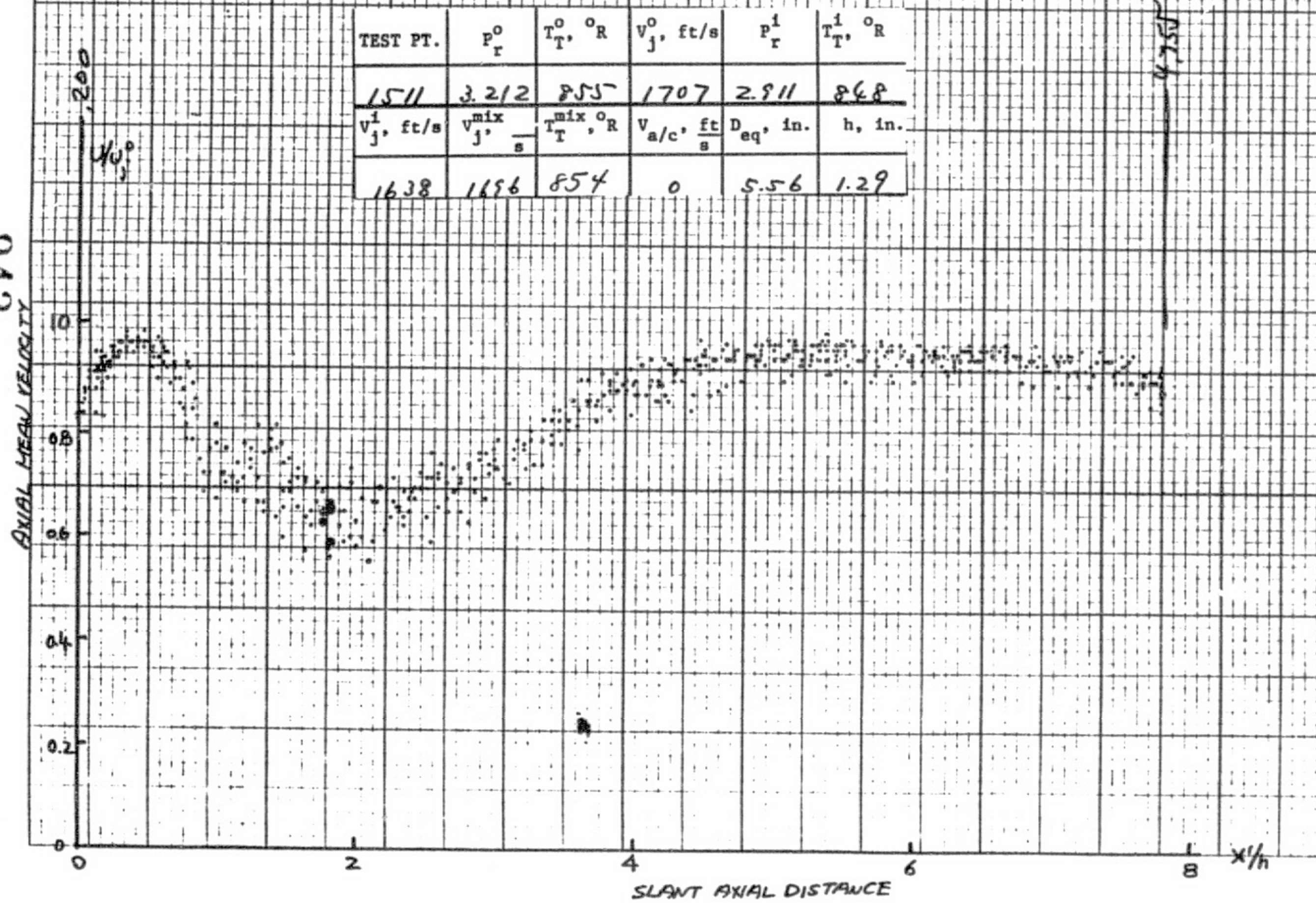
HISTOGRAMS: H- TO H-

G-2566 Corresponds to 4

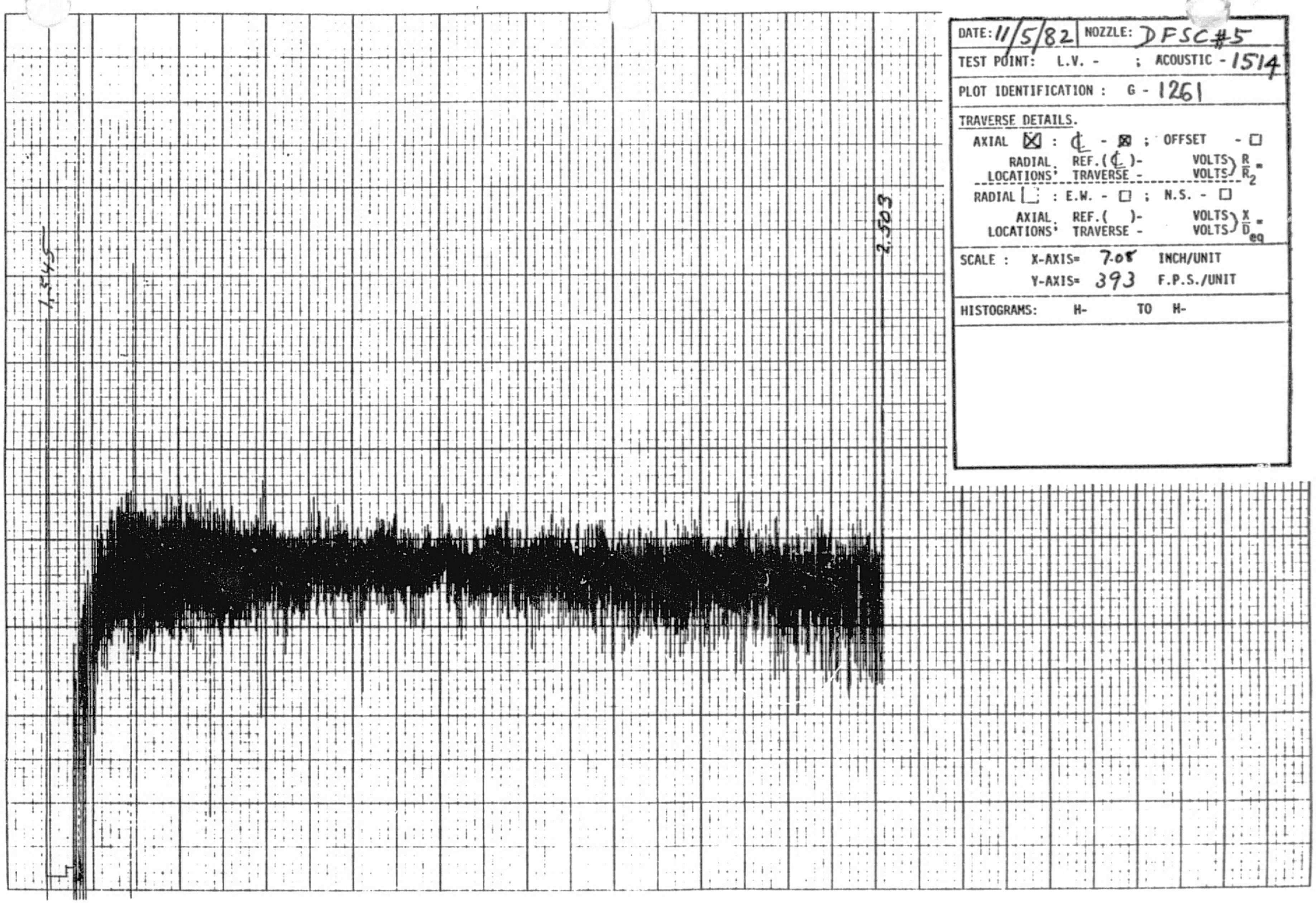


Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1511	3.212	855	1707	2.911	868
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1638	1686	854	0	5.56	1.29



943



DATE: 11/5/82 | NOZZLE: DFSC#5

TEST POINT: L.V. - ; ACOUSTIC - 1514

PLOT IDENTIFICATION : G - 1261

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

944

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DATE: 11/5/82	NOZZLE: DFSC#5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION : G - 1262	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - ; VOLTS/VOLTS $\} \frac{R}{R_2}$ =

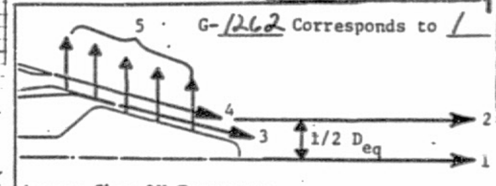
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS; REF.( )- TRAVERSE - ; VOLTS/VOLTS $\} \frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.08 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

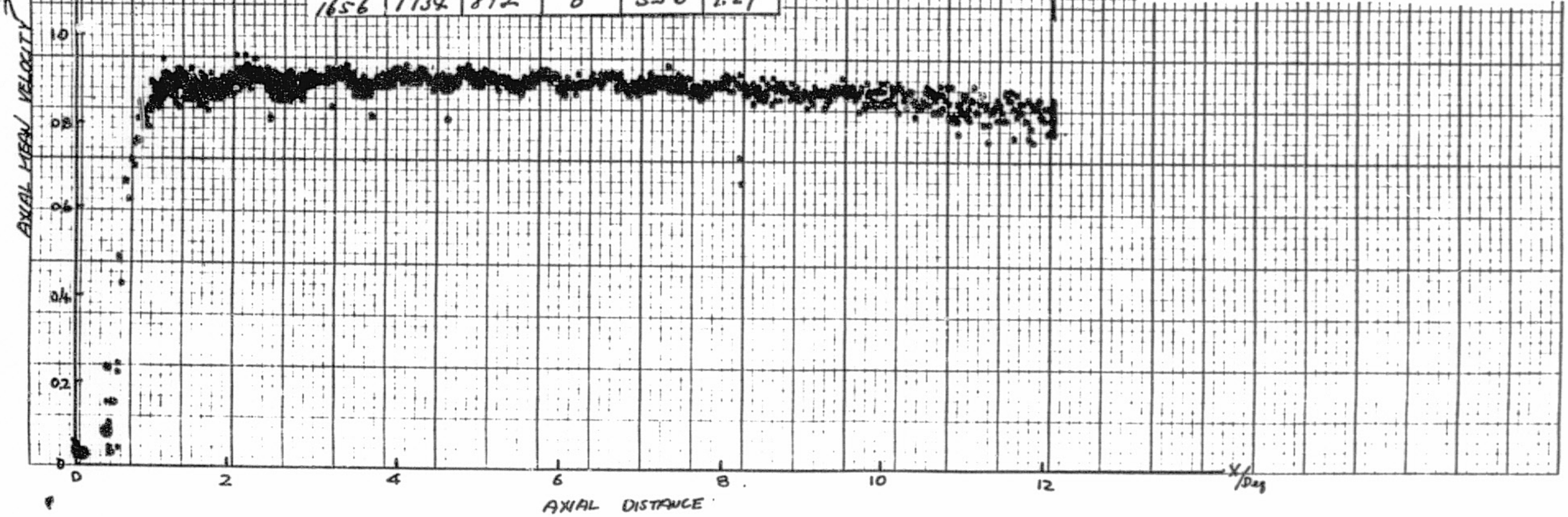
HISTOGRAMS: H- TO H-

G-1262 Corresponds to 1



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1514	3.214	897	1749	2919	865
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1656	1734	892	0	5.56	1.29



NO. XY 1101

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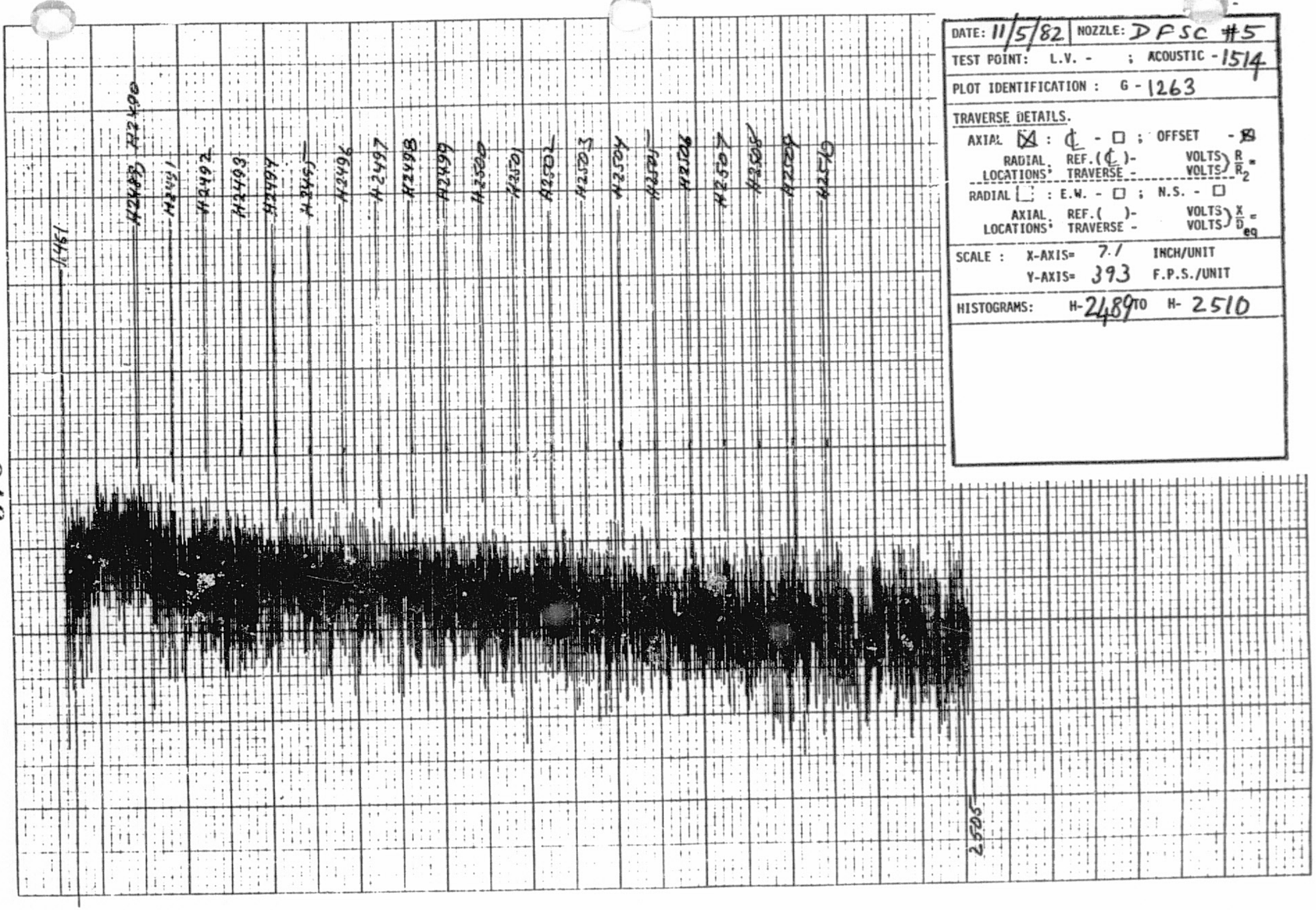

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DATE: 11/5/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 1514

PLOT IDENTIFICATION : G - 1264

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS X/D_{eq} =

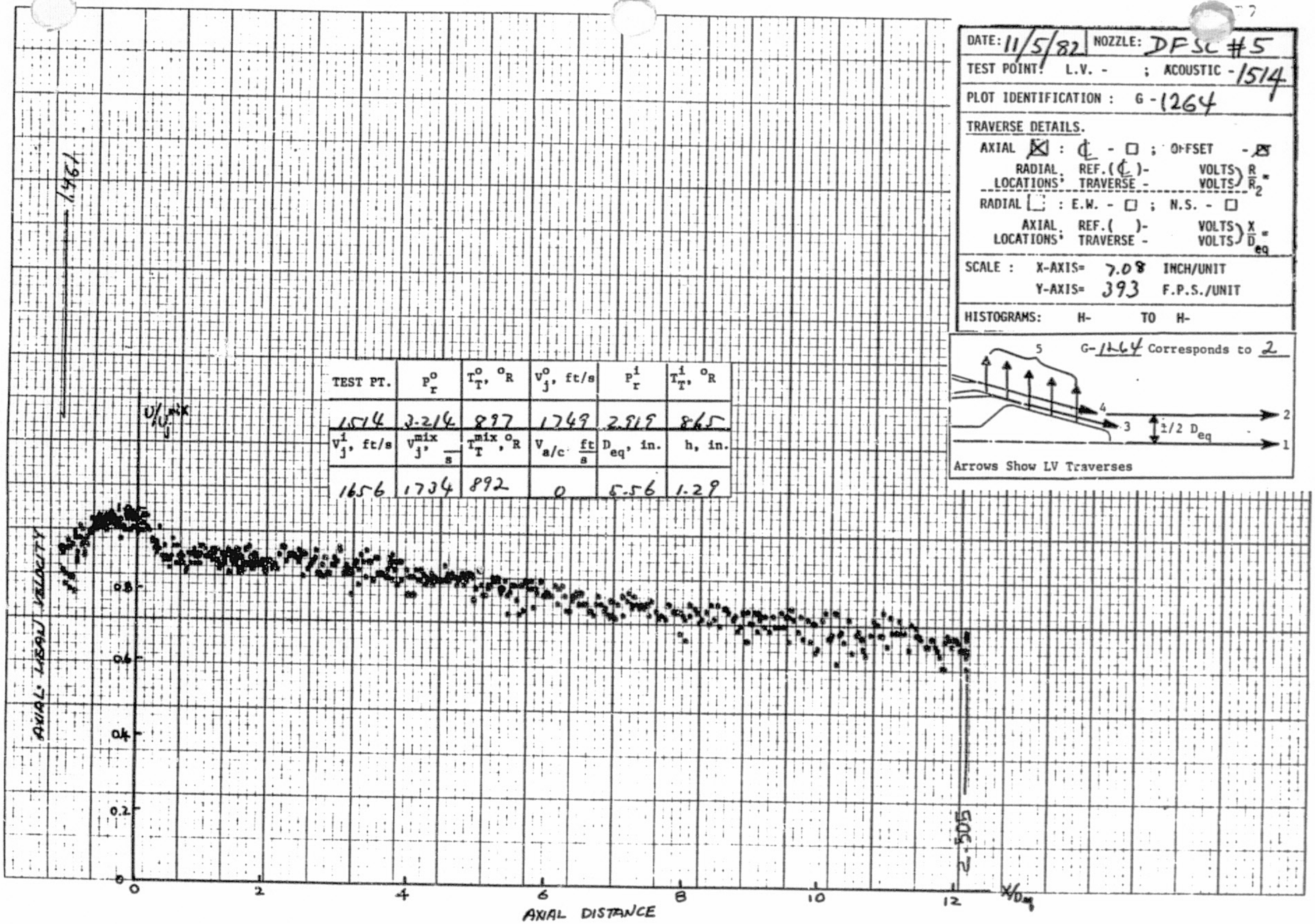
SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-1264 Corresponds to 2

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1514	3.214	897	1749	2.919	865
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$ ft/s	D_{eq}, in.	h, in.
1656	1734	892	0	5.56	1.29



No. XY 1101

947

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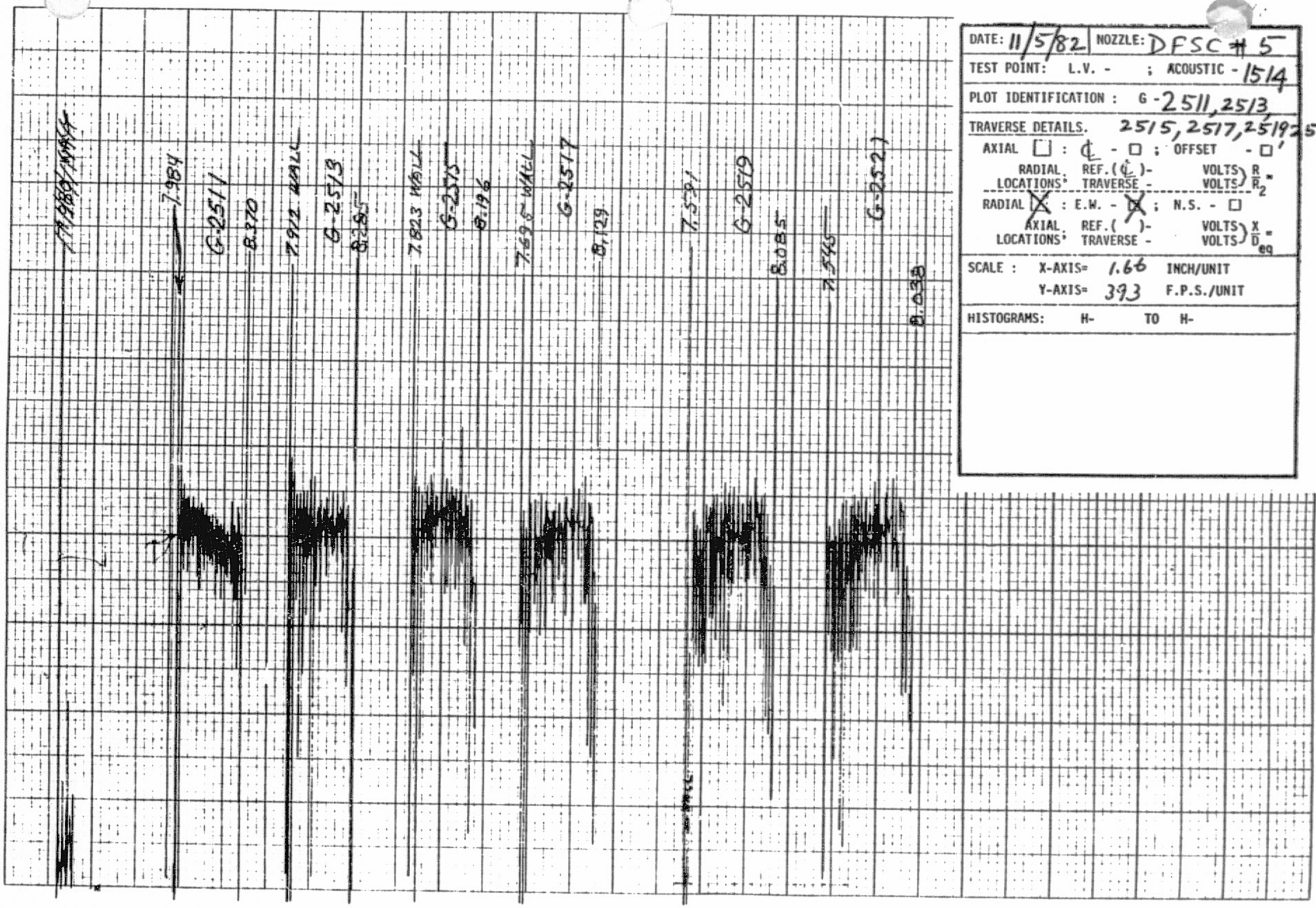

DATE: 11/5/82 NOZZLE: DFSC # 5

TEST POINT: L.V. - ; ACOUSTIC - 1514

PLOT IDENTIFICATION : G - 2511, 2513, 2515, 2517, 2519, 2521

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐'

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

No. XY 1101

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TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1514	3.214	897	1749	2.919	865
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1656	1734	892	0	5.56	1.29

DATE: 11/5/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 1514

PLOT IDENTIFICATION : G - 2512, 2514, 2516, 2518, 2520, 2522

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

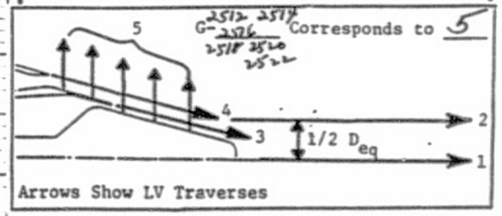
RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

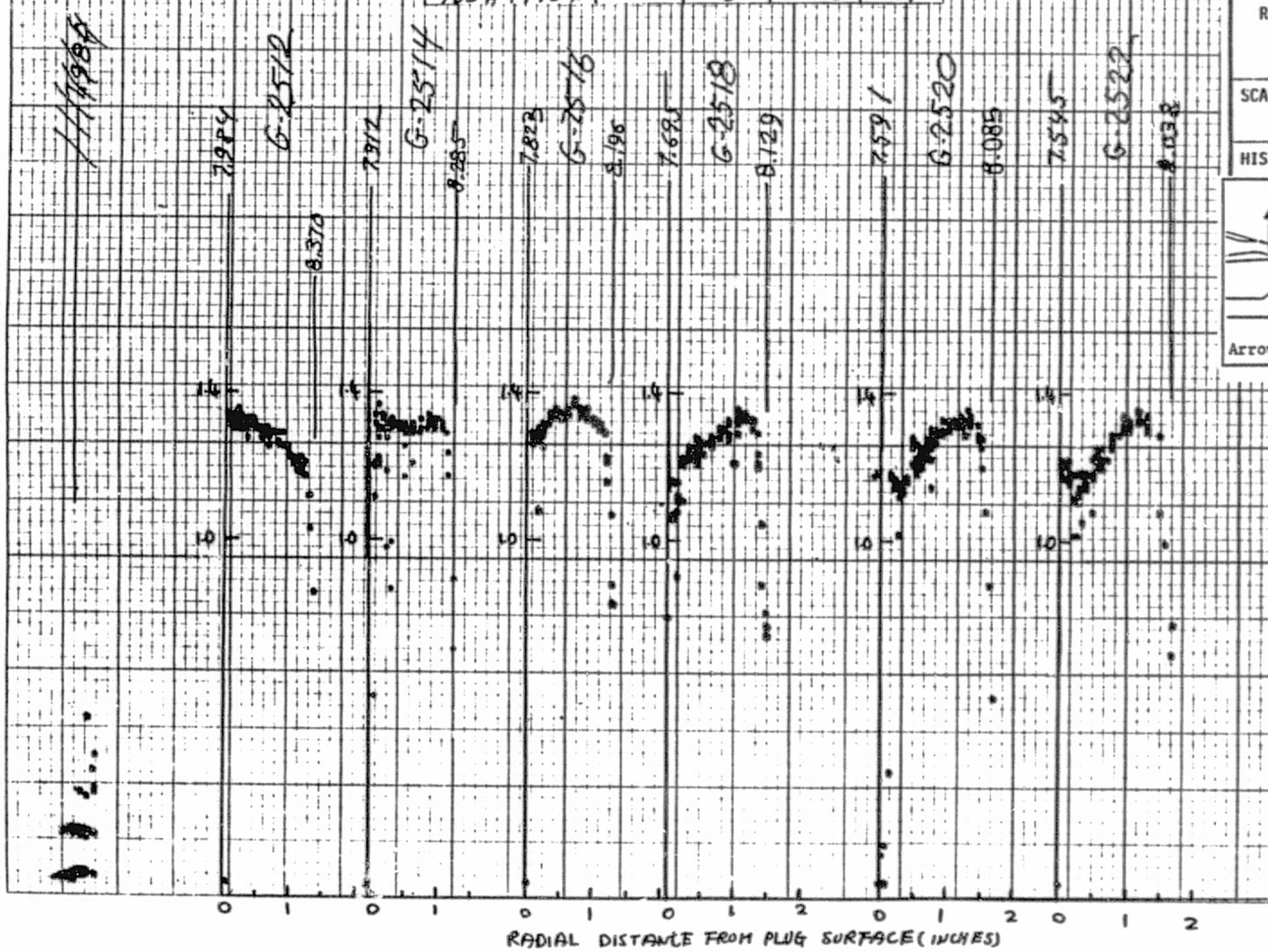
AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-





NO. XY 1101

940

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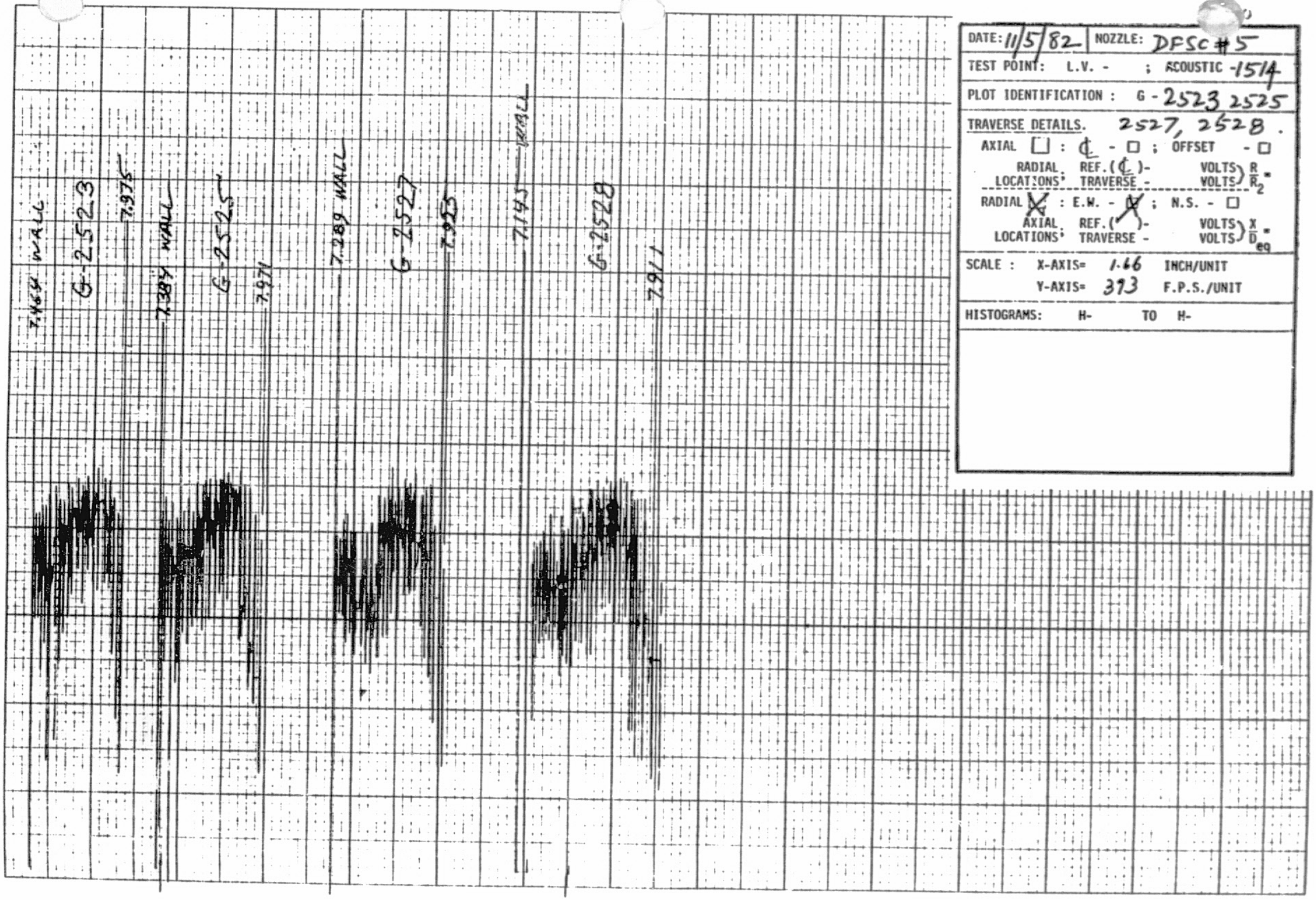
950



DATE: 11/5/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC -1514	
PLOT IDENTIFICATION : G - 2523 2525 2527, 2528.	
TRAVERSE DETAILS.	
AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐	
RADIAL LOCATIONS; REF. (℄)- TRAVERSE -	VOLTS / VOLTS) R/R_2 =
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐	
AXIAL LOCATIONS; REF. ( )- TRAVERSE -	VOLTS / VOLTS) X/D_{eq} =
SCALE : X-AXIS= 1.66 INCH/UNIT	Y-AXIS= 393 F.P.S./UNIT
HISTOGRAMS: H- TO H-	

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^j, °R
1514	3.214	897	1749	2.919	865
V_j^i, ft/s	V_j^{mix}, $\frac{ft}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1656	1734	892	0	5.56	1.29

DATE: 11/5/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC - 1514

PLOT IDENTIFICATION : G - 2524, 2526 2528, 2530

TRAVERSE DETAILS.

AXIAL ☐ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

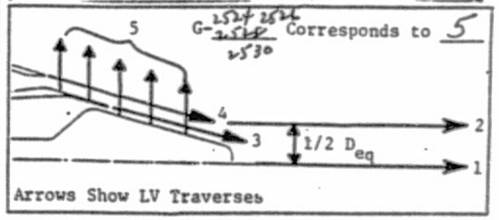
RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

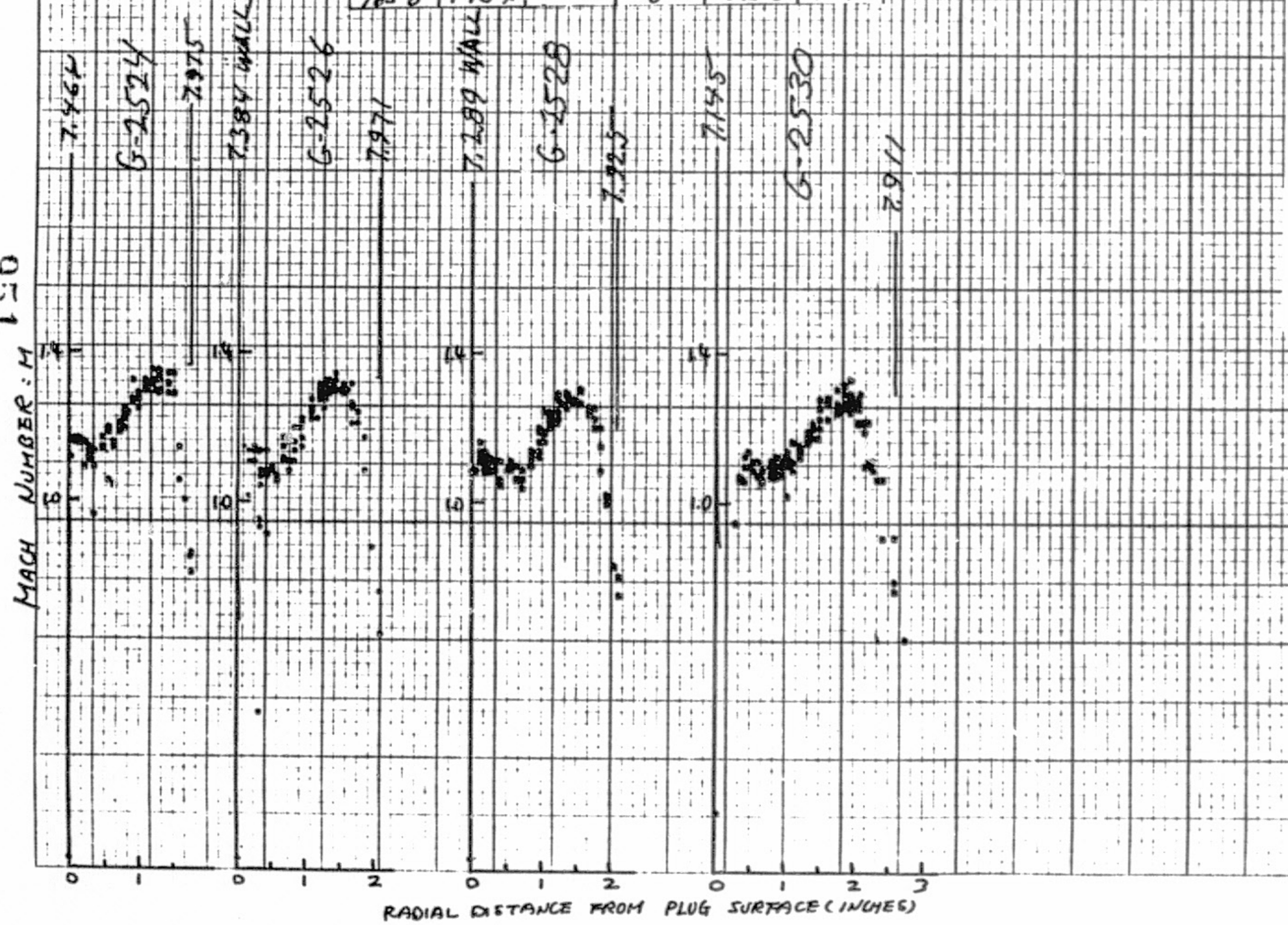
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.66 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-





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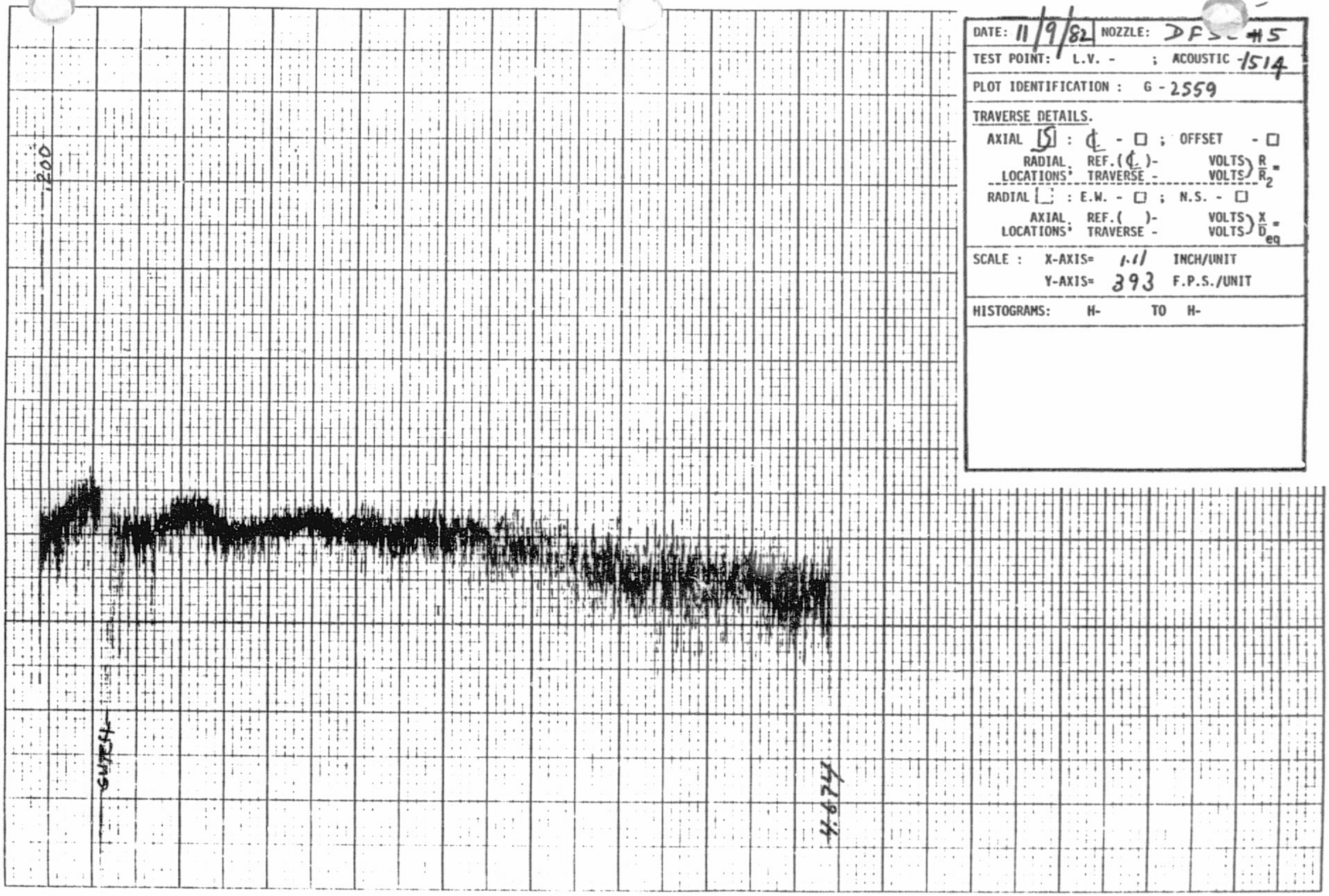


DATE: 11/9/82 NOZZLE: DFSC #5

TEST POINT: L.V. - ; ACOUSTIC -1514

PLOT IDENTIFICATION : G - 2559

TRAVERSE DETAILS.

AXIAL [S] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

952

NO. XY 1101

DATE: 11/9/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION : G - 2560	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

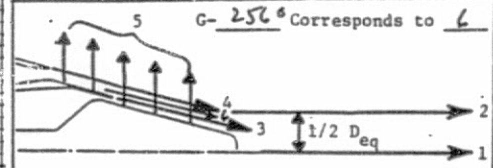
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

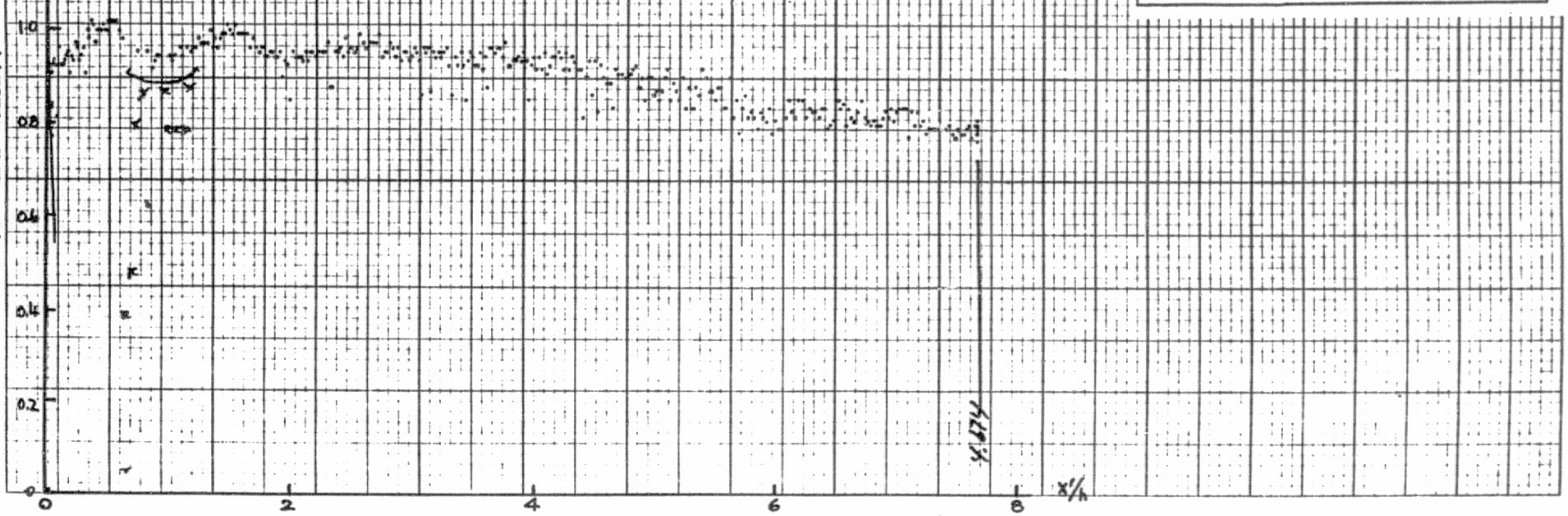
HISTOGRAMS: H- TO H-

G- 2560 Corresponds to 6



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1514	3.214	897	1749	2.919	865
V_j^i, ft/s	V_j^{mix}, $\frac{}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1656	1734	892	0	5.56	1.29



No. XY 1101

953

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DATE: 11/9/82	NOZZLE: DFSC #5	
TEST POINT: L.V. - ; ACOUSTIC - 1514		
PLOT IDENTIFICATION : G - 2561		

TRAVERSE DETAILS.

AXIAL [✓] : ℄ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

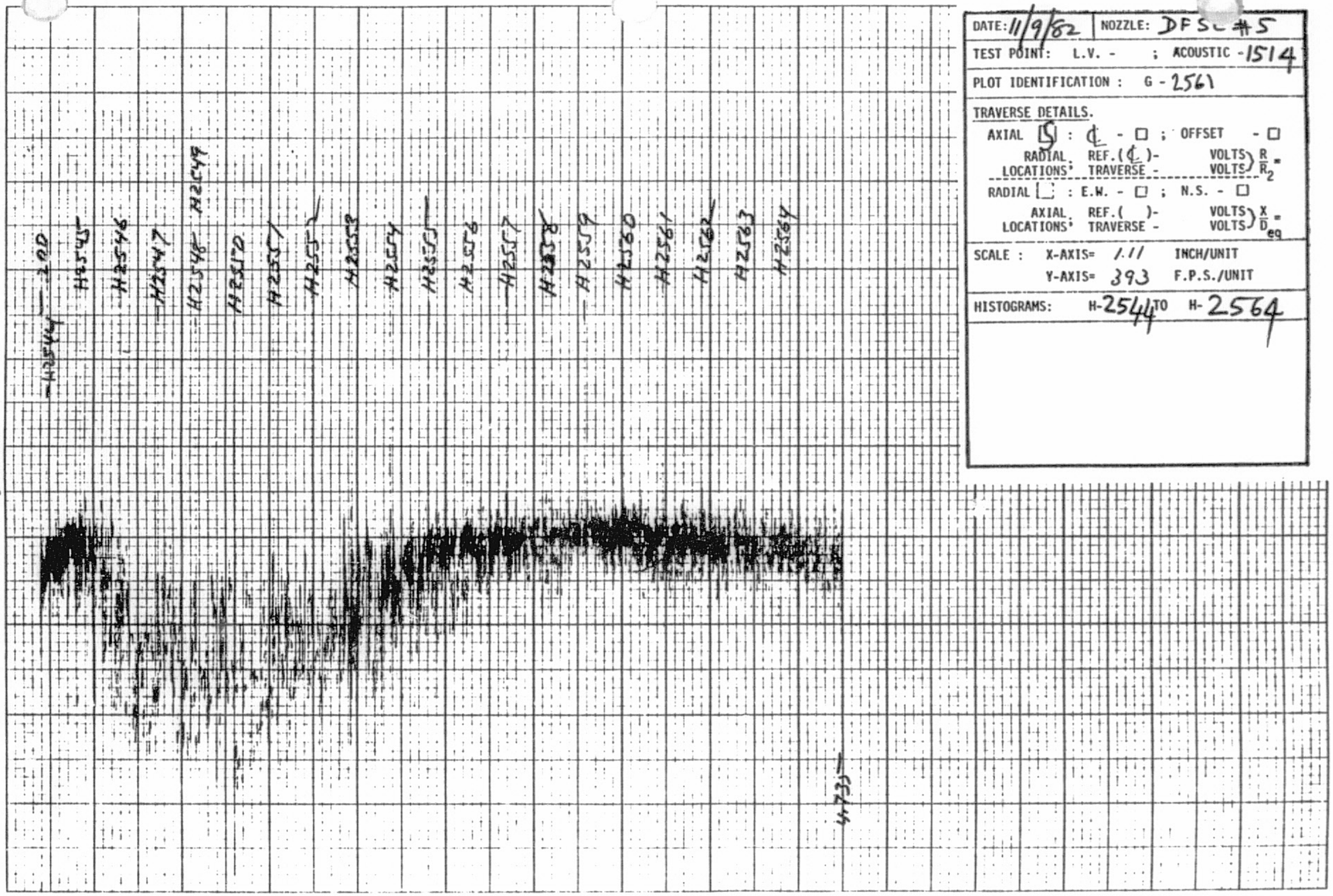
RADIAL [ ] : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H-2544 TO H-2564



954

NO. XY 1101

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK PRINTED IN U.S.A.

ORIGINAL PAGE IS OF POOR QUALITY

DATE: 11/9/82	NOZZLE: DFSC #5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION : G - 2562	

TRAVERSE DETAILS.

AXIAL [X] : ℄ - □ ; OFFSET - □

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS/VOLTS R/R_2 =

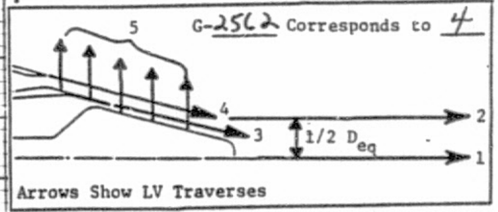
RADIAL [ ] : E.W. - □ ; N.S. - □

AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS/VOLTS X/D_{eq} =

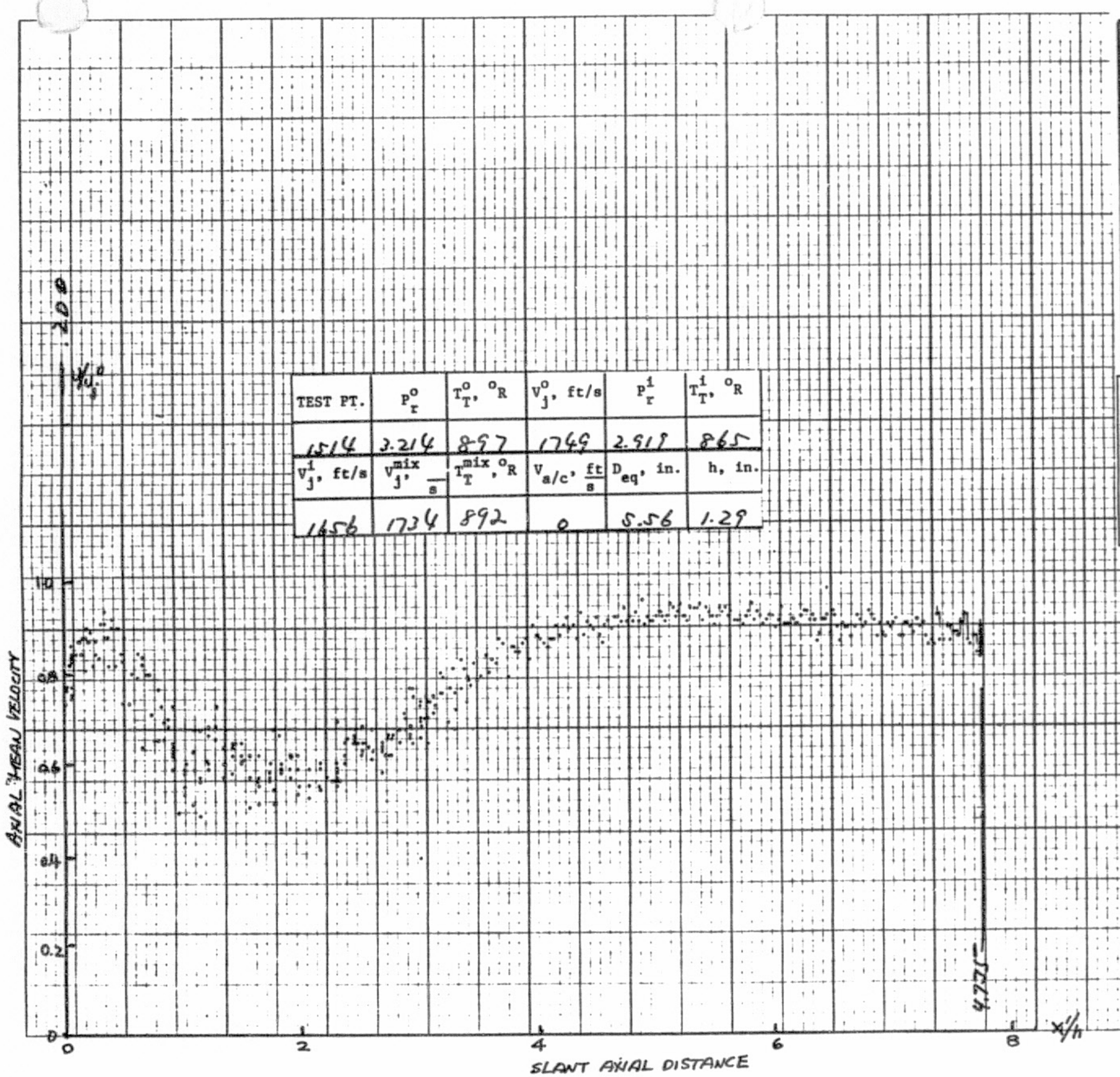
SCALE : X-AXIS= 1.11 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1514	3.214	897	1749	2.918	865
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1656	1734	892	0	5.56	1.29



NO. XY 1101

955

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5.2.3.6 Mean Velocity Traces of DFSC-6

DATE: 11/12/82 NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC - 619

PLOT IDENTIFICATION : G - 3016

TRAVERSE DETAILS.

AXIAL [X] : ℄ - [X] ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄) - TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

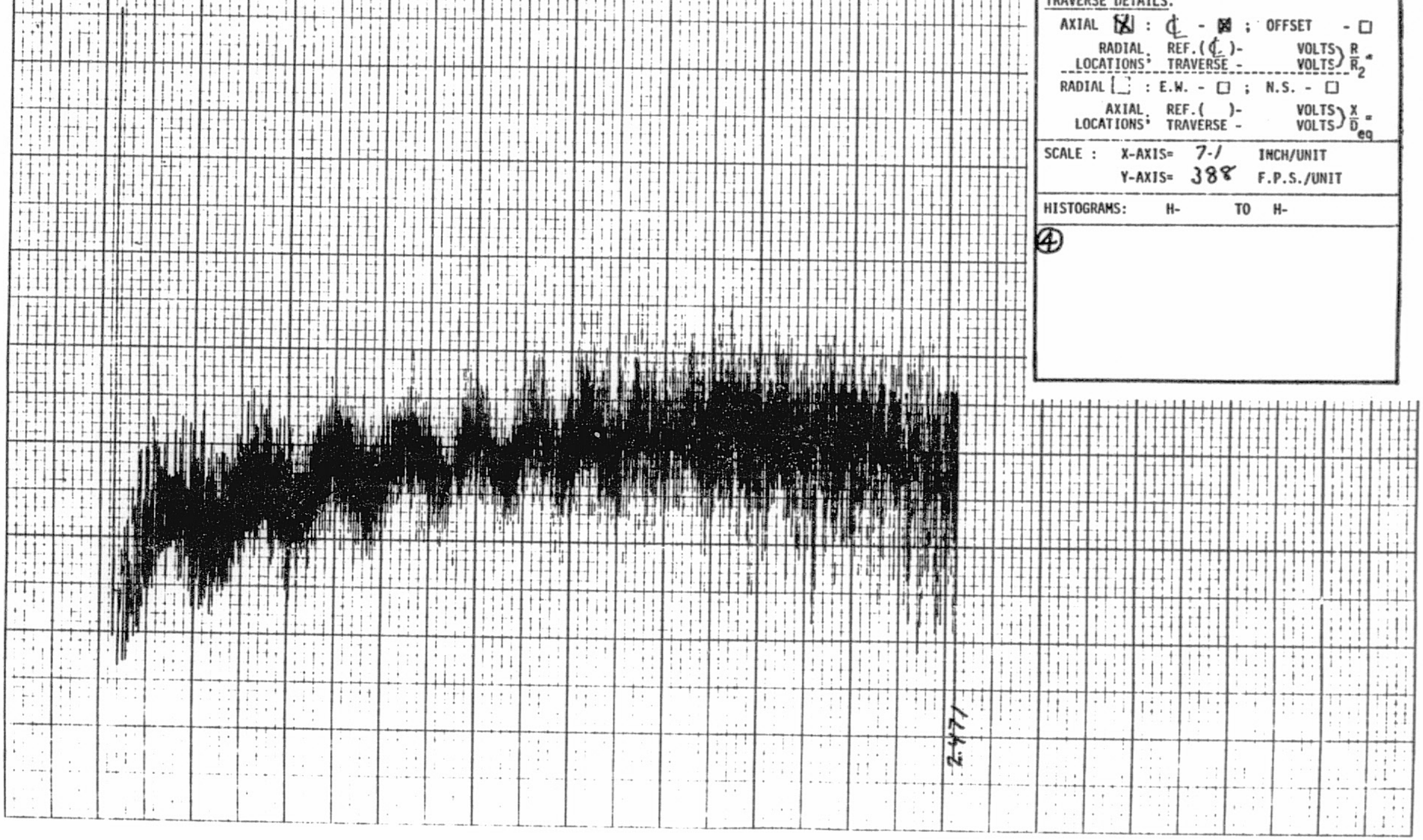
AXIAL LOCATIONS: REF. ( ) - TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

4



957

DATE: 11/12/82 NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC - 619

PLOT IDENTIFICATION : G - 3017

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 7.07 INCH/UNIT

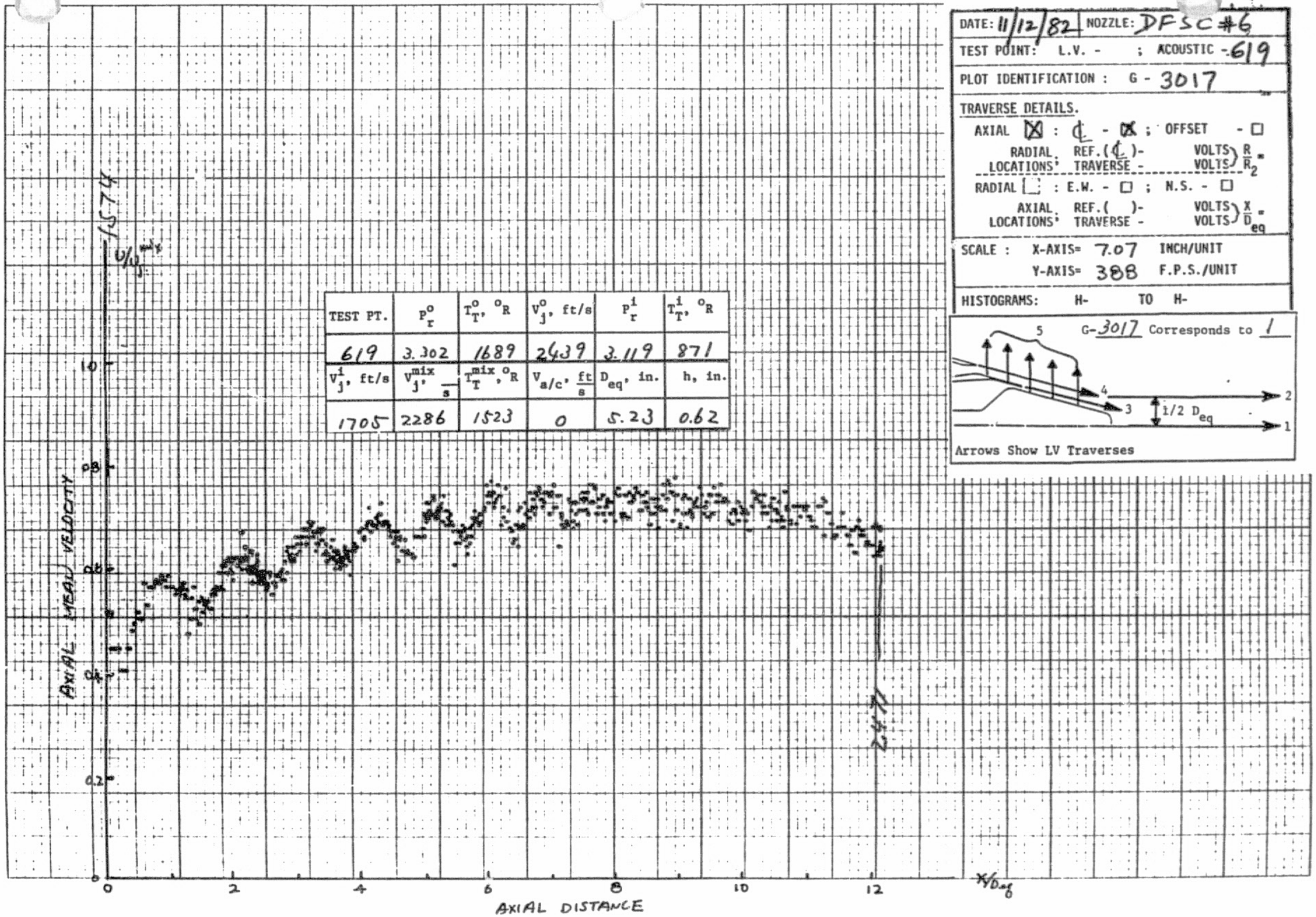
Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

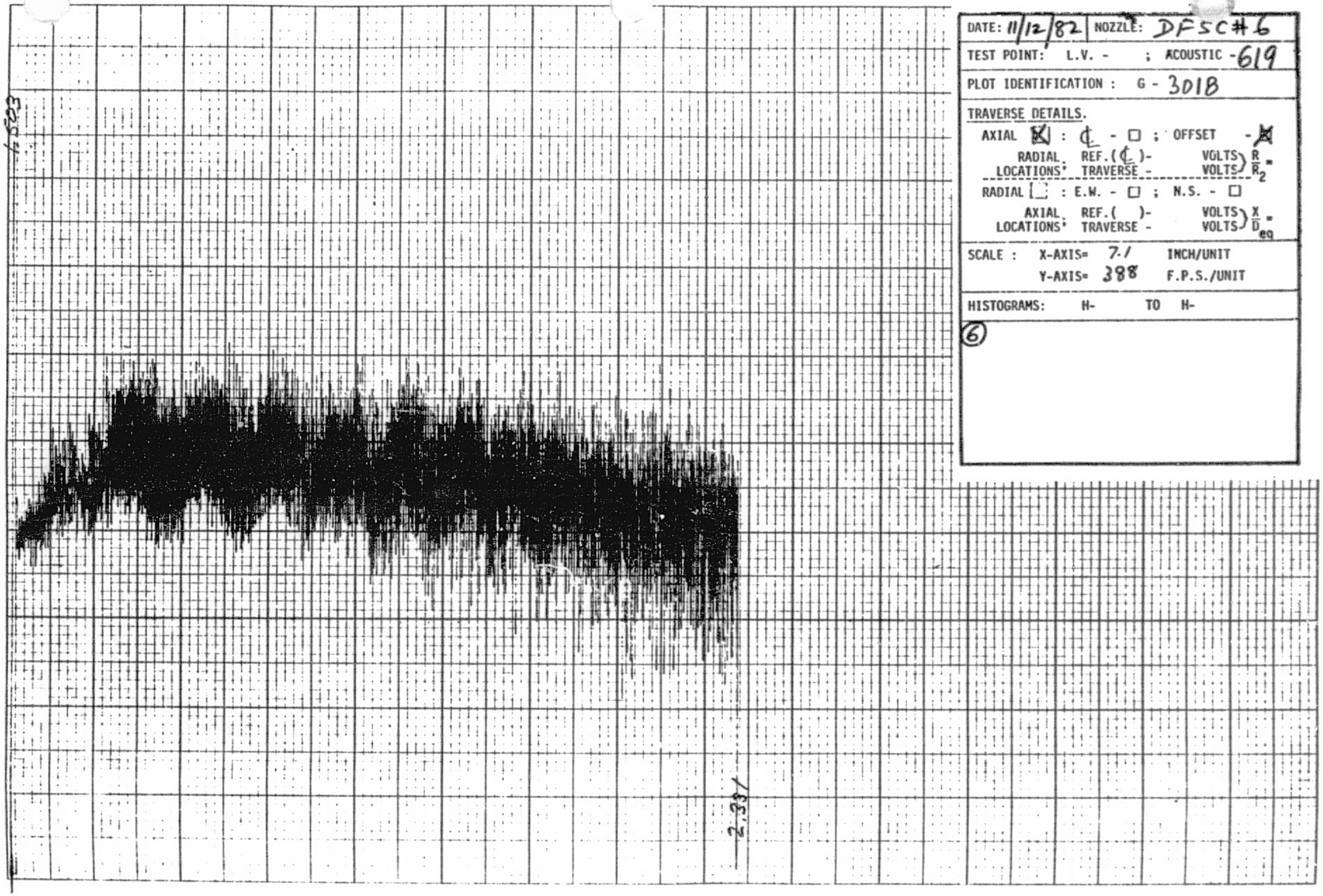
G-3017 Corresponds to 1

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
619	3.302	1689	2439	3.119	871
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1705	2286	1523	0	5.23	0.62



958



DATE: 11/12/82	NOZZLE: DFSC#6
TEST POINT: L.V. - ; ACOUSTIC - 619	
PLOT IDENTIFICATION : G - 301B	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

6

NO. XY 1101

959

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DATE: 11/12/82	NOZZLE: DFSC #6
TEST POINT: L.V. - ; ACOUSTIC - 619	
PLOT IDENTIFICATION : G - 3019	

TRAVERSE DETAILS.

AXIAL [X] : ℄ - ☐ ; OFFSET - [X]

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS } $\frac{R}{R_2}$ =

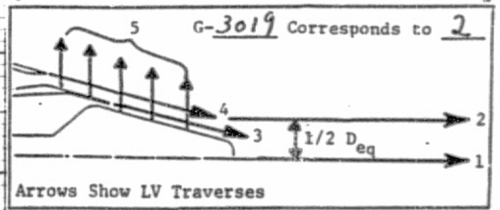
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS } $\frac{X}{D_{eq}}$ =

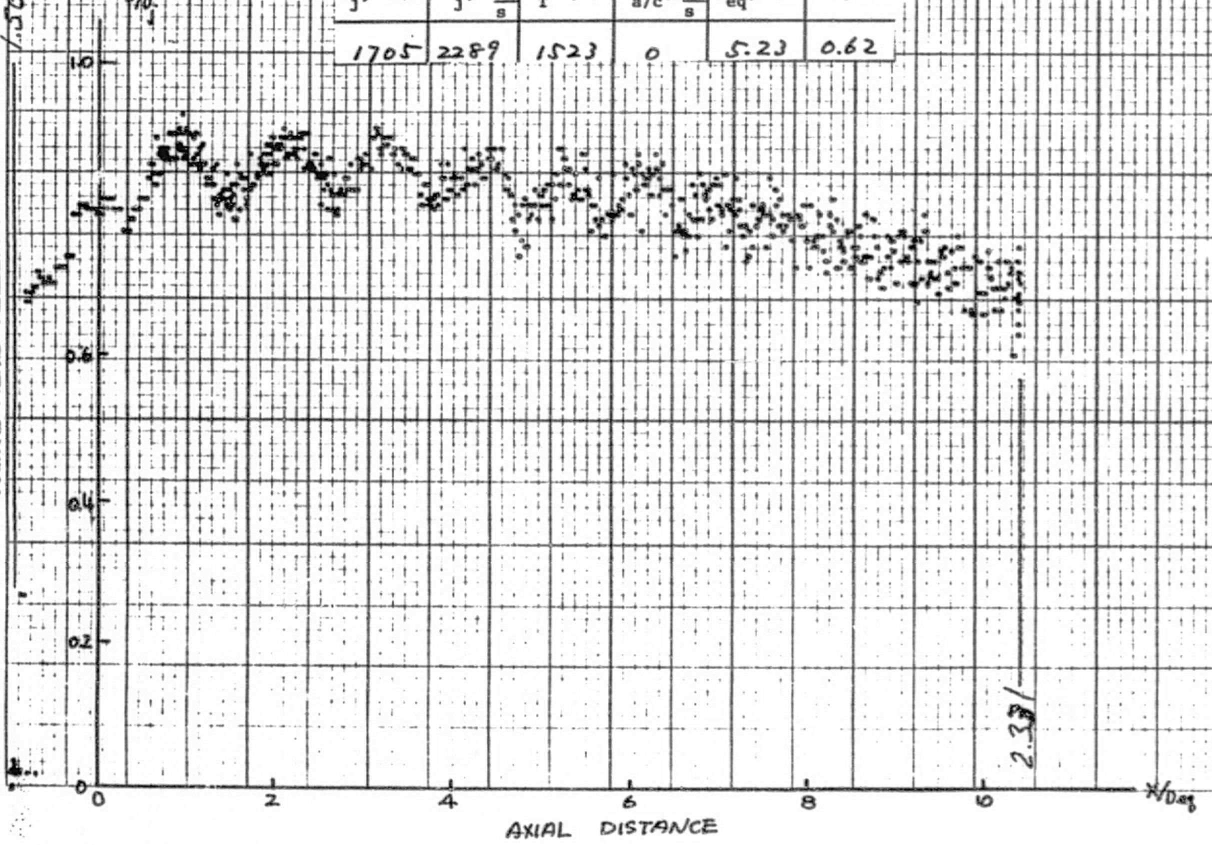
SCALE : X-AXIS= 7.07 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

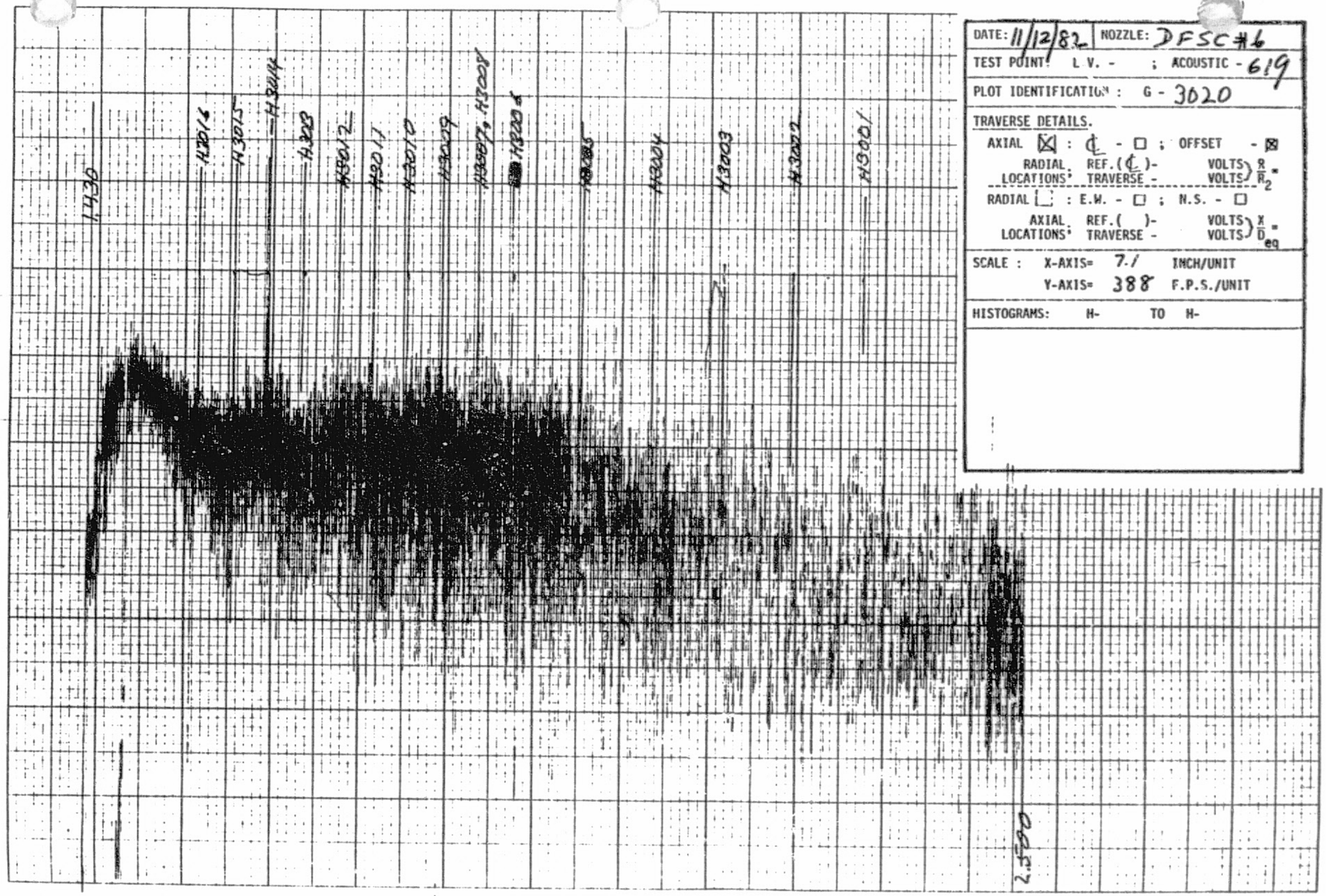
HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
619	3.302	1689	2439	3.119	871
V_j^i, ft/s	V_j^{mix}, $\frac{}{s}$	T_T^{mix}, °R	$V_{a/c}$, $\frac{ft}{s}$	D_{eq}, in.	h, in.
1705	2289	1523	0	5.23	0.62



960



NO. XY 1101

961

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DATE: 11/12/82 NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC - 619

PLOT IDENTIFICATION : G - 3021

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS' REF.(℄)- TRAVERSE - VOLTS/VOLTS } R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

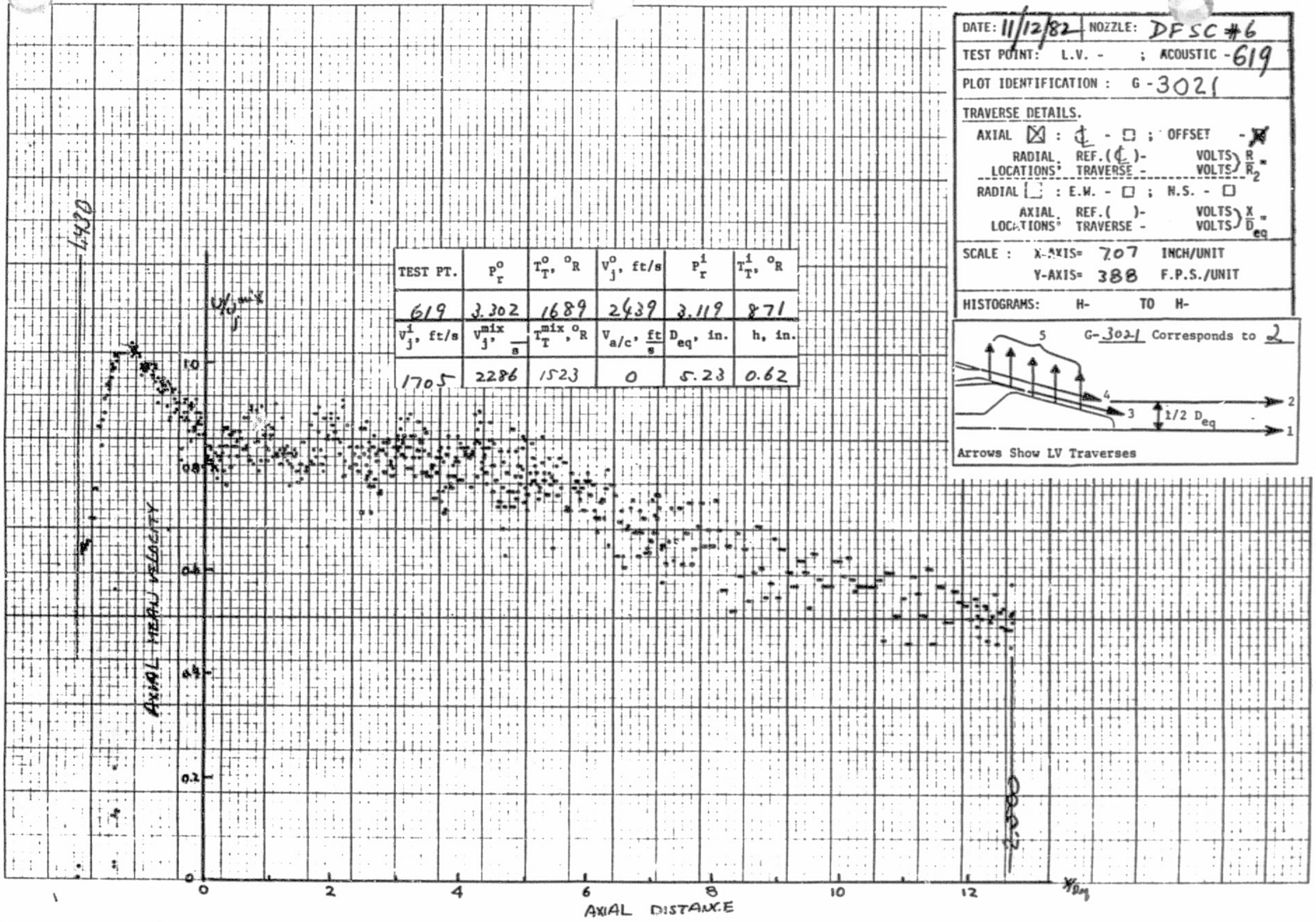
AXIAL LOCATIONS' REF.( )- TRAVERSE - VOLTS/VOLTS } X/D_{eq} =

SCALE : X-AXIS= 707 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
619	3.302	1689	2439	3.119	871
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1705	2286	1523	0	5.23	0.62



NO. XY 1101

962

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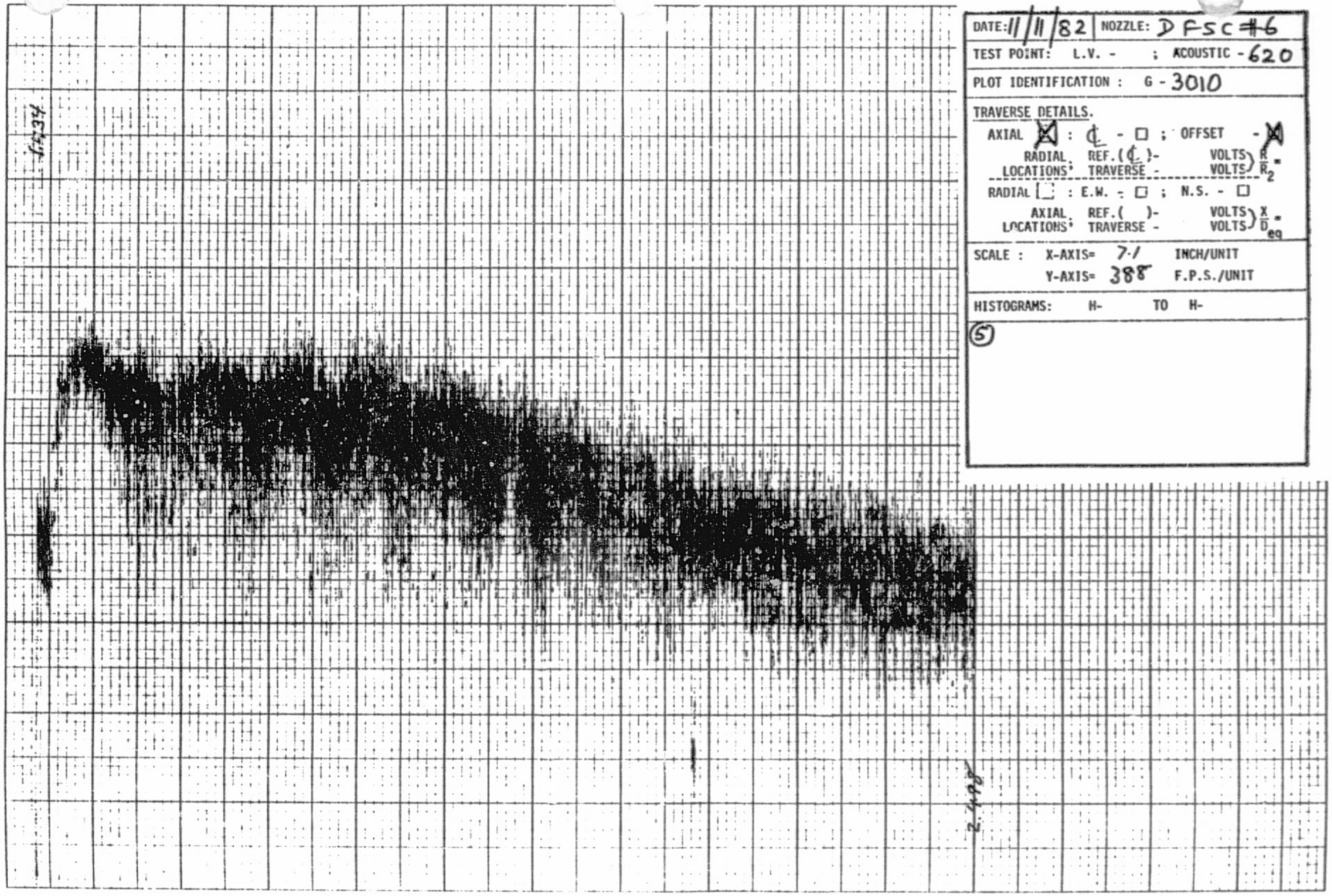

DATE: 11/11/82 | NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC - 620

PLOT IDENTIFICATION : G - 3010

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

5

No. XY 1101

963

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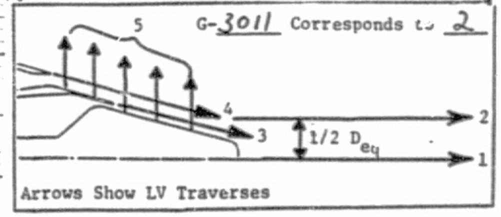
DATE: 11/8/82	NOZZLE: DFSC #6
TEST POINT: L.V. - ; ACOUSTIC - 620	
PLOT IDENTIFICATION : G - 3011	

TRAVERSE DETAILS.

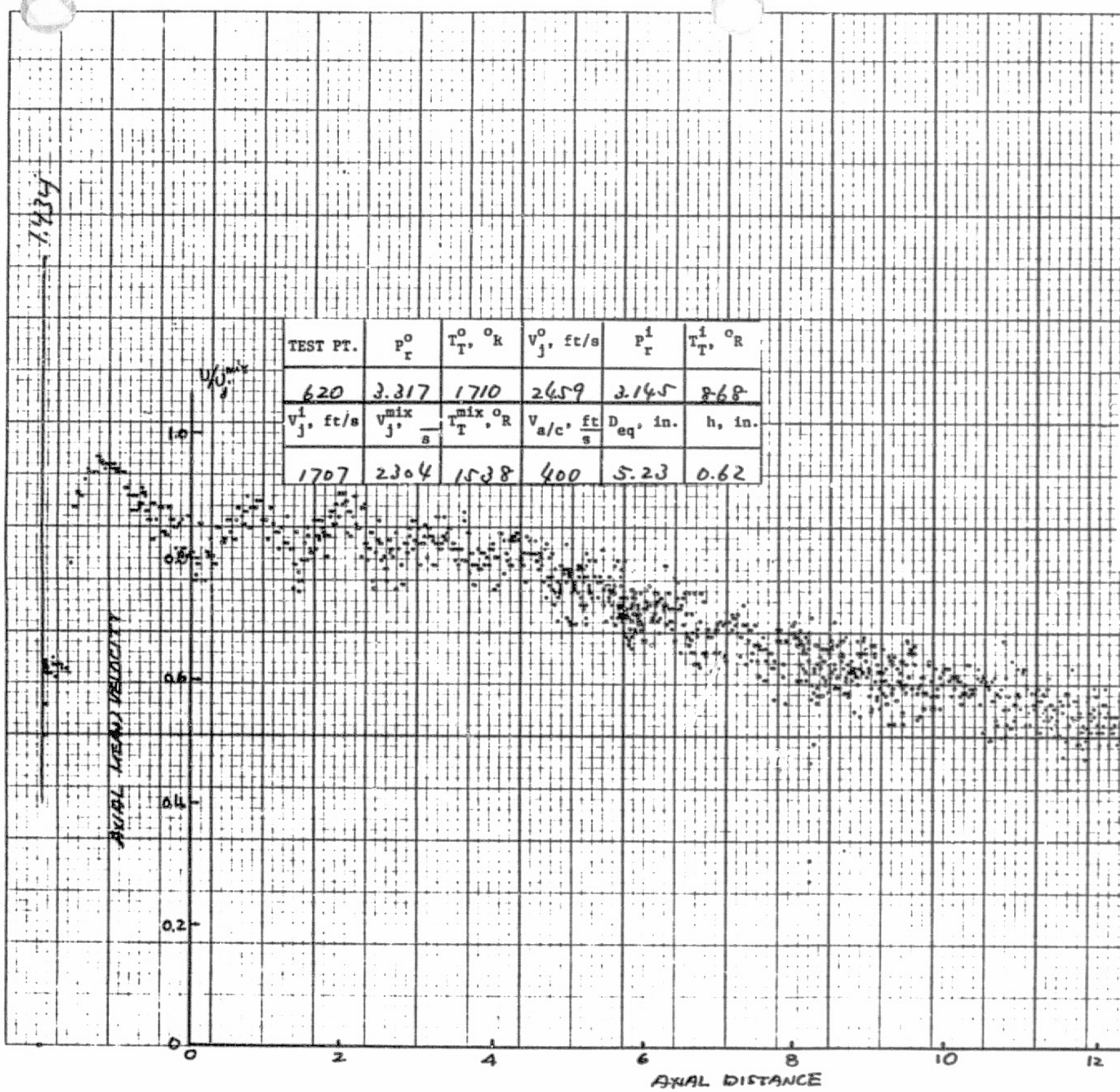
AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒
RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.07 INCH/UNIT
Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
620	3.317	1710	2459	2.145	868
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1707	2304	1538	400	5.23	0.62



964

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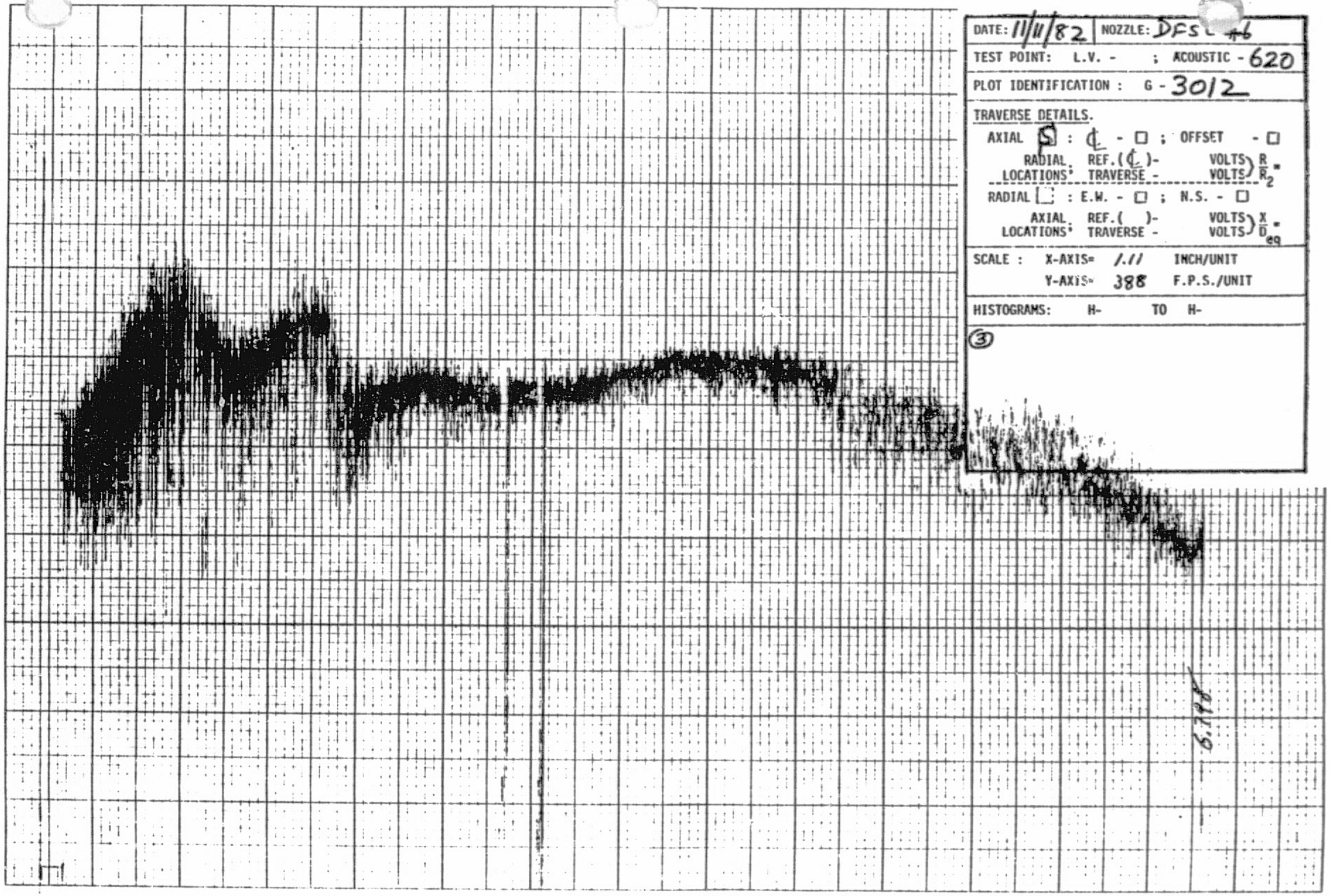

NO. XY 1101

965

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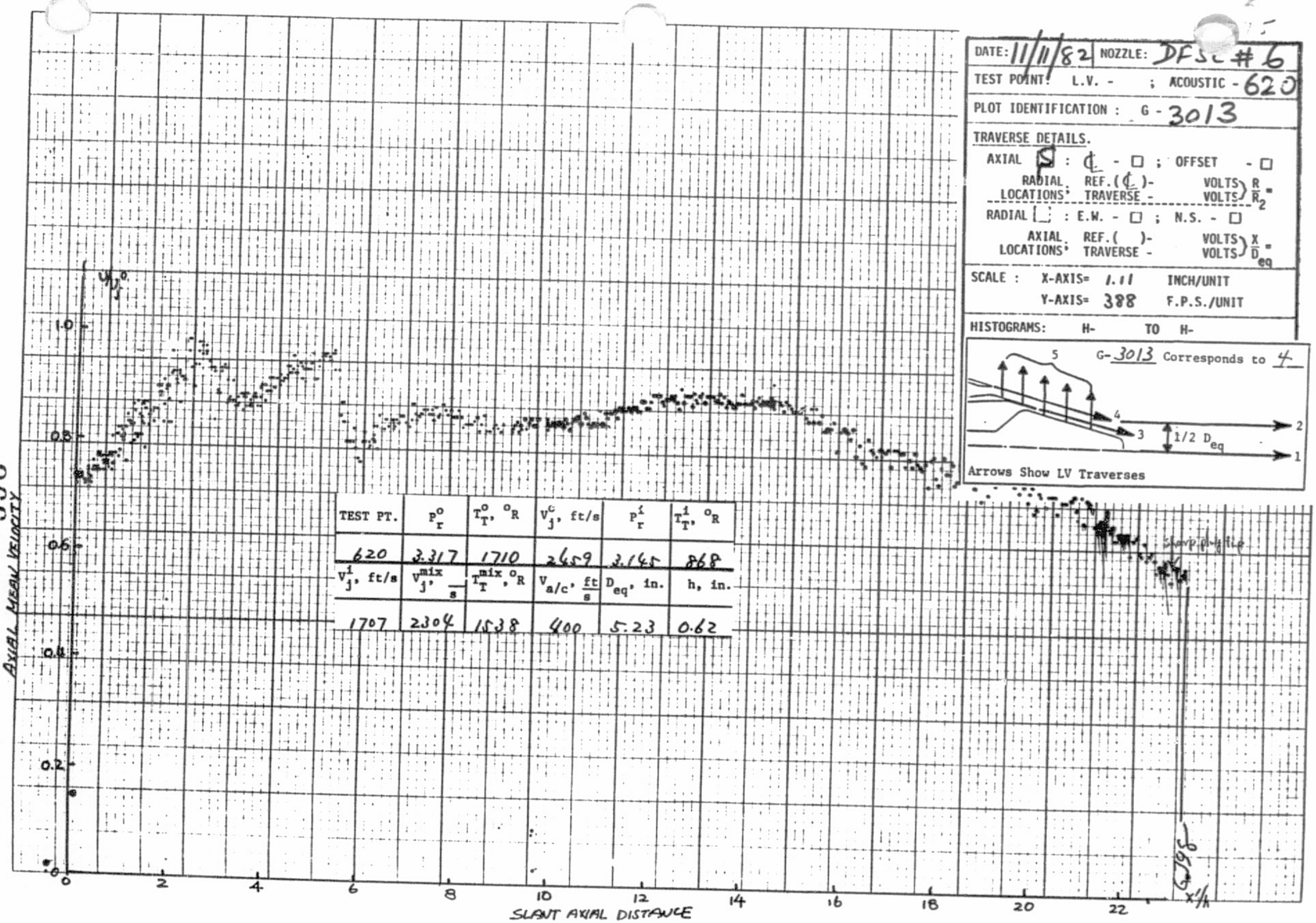


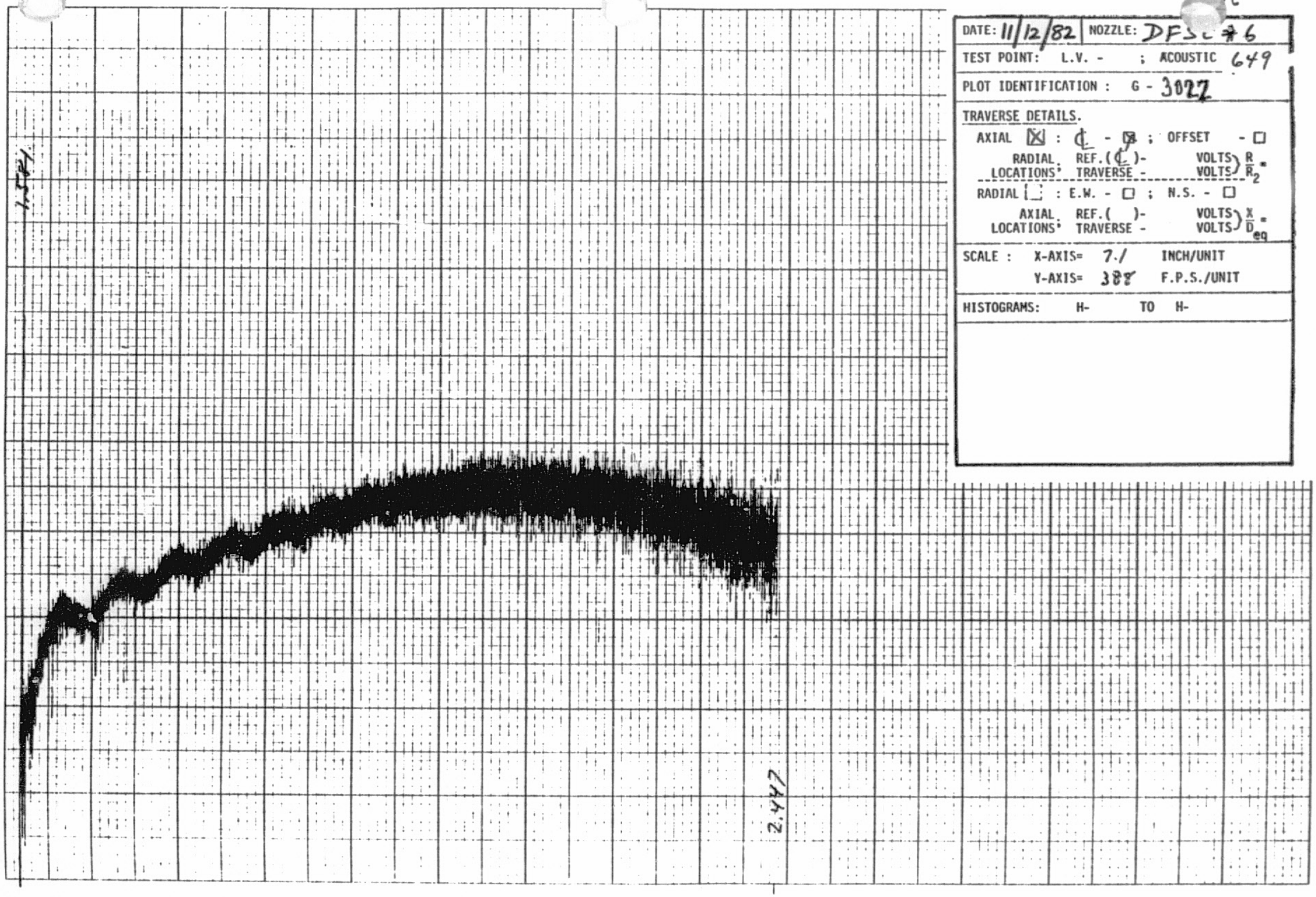
TEST PT.	P_r^o	T_T^o, °R	V_j^c, ft/s	P_r^i	T_T^i, °R
620	3.317	1710	2459	2.145	868
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1707	2304	1538	400	5.23	0.62

996

NO. XY 1101

RECORDING CHARTS GRAPHIC CONTROLS CORPORATION BUFFALO NEW YORK

ORIGINAL PAGE IS OF POOR QUALITY



DATE: 11/12/82 NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC 649

PLOT IDENTIFICATION : G - 3027

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS / VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS / VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

NO. XY 1101

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DATE: 11/12/82 NOZZLE: DFSC#6

TEST POINT: L.V. - ; ACOUSTIC 649

PLOT IDENTIFICATION : G - 3023

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS / VOLTS } $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

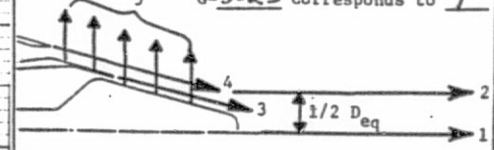
AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS / VOLTS } $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.07 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

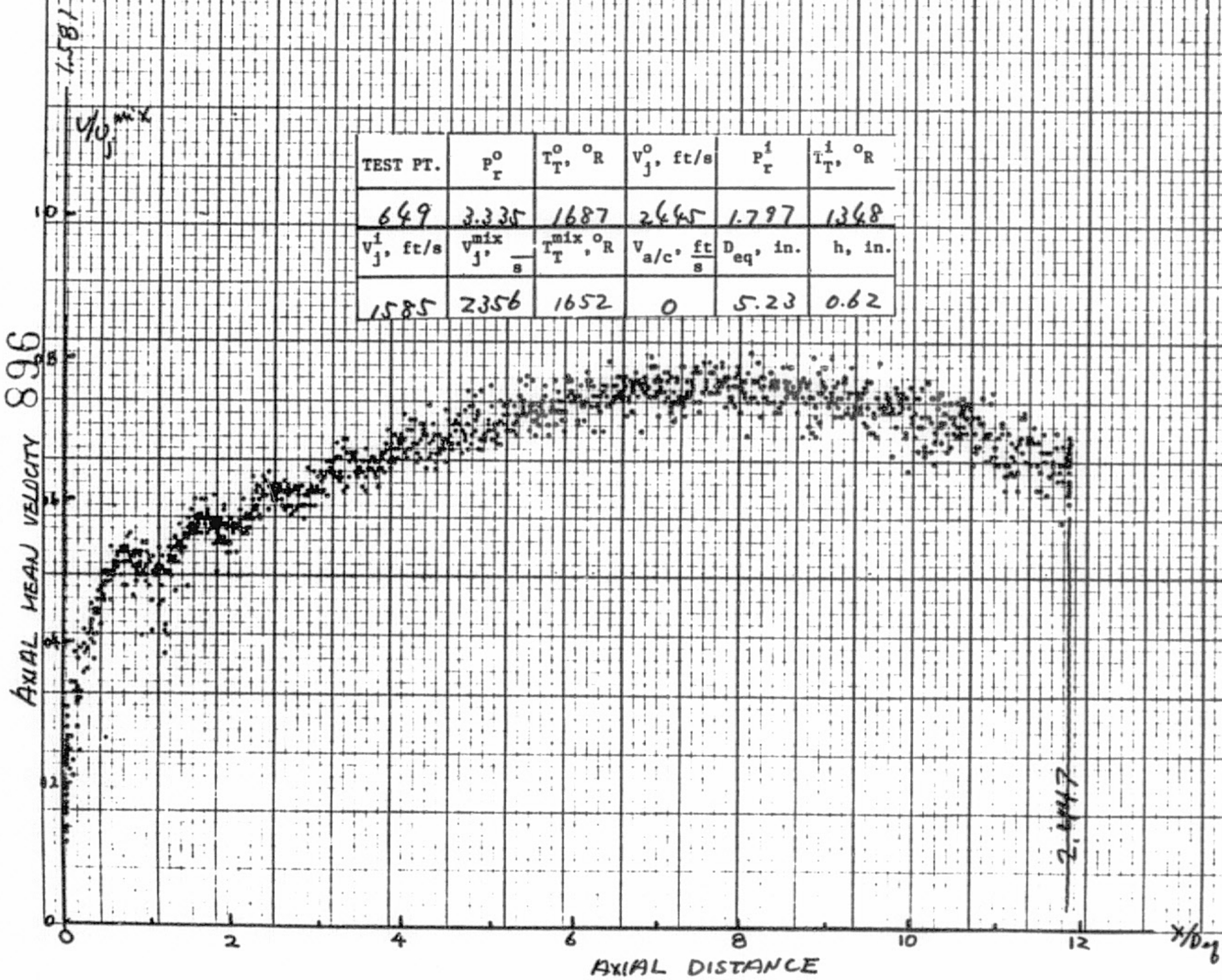
HISTOGRAMS: H- TO H-

G-3023 Corresponds to 1



Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
649	3.335	1687	2645	1.797	1348
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1585	2356	1652	0	5.23	0.62



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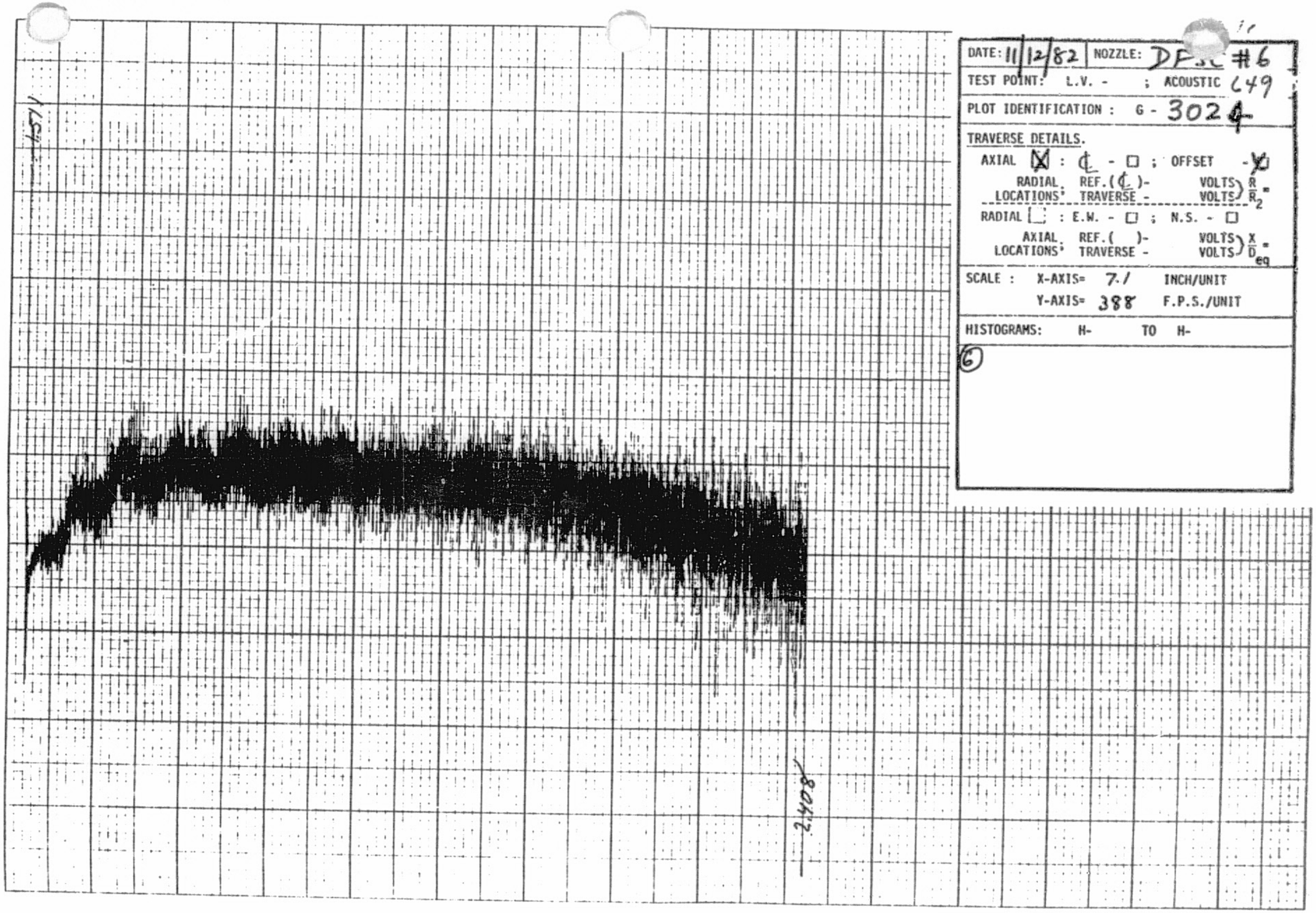

NO. XY 1101

969

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DATE: 11/12/82 NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC - 649

PLOT IDENTIFICATION : G - 3025

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS; REF.(℄)- TRAVERSE - ; VOLTS/VOLTS) R/R_2 =

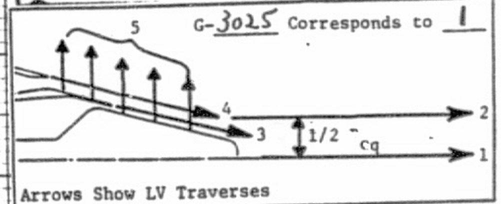
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS; REF.( )- TRAVERSE - ; VOLTS/VOLTS) X/D_{eq} =

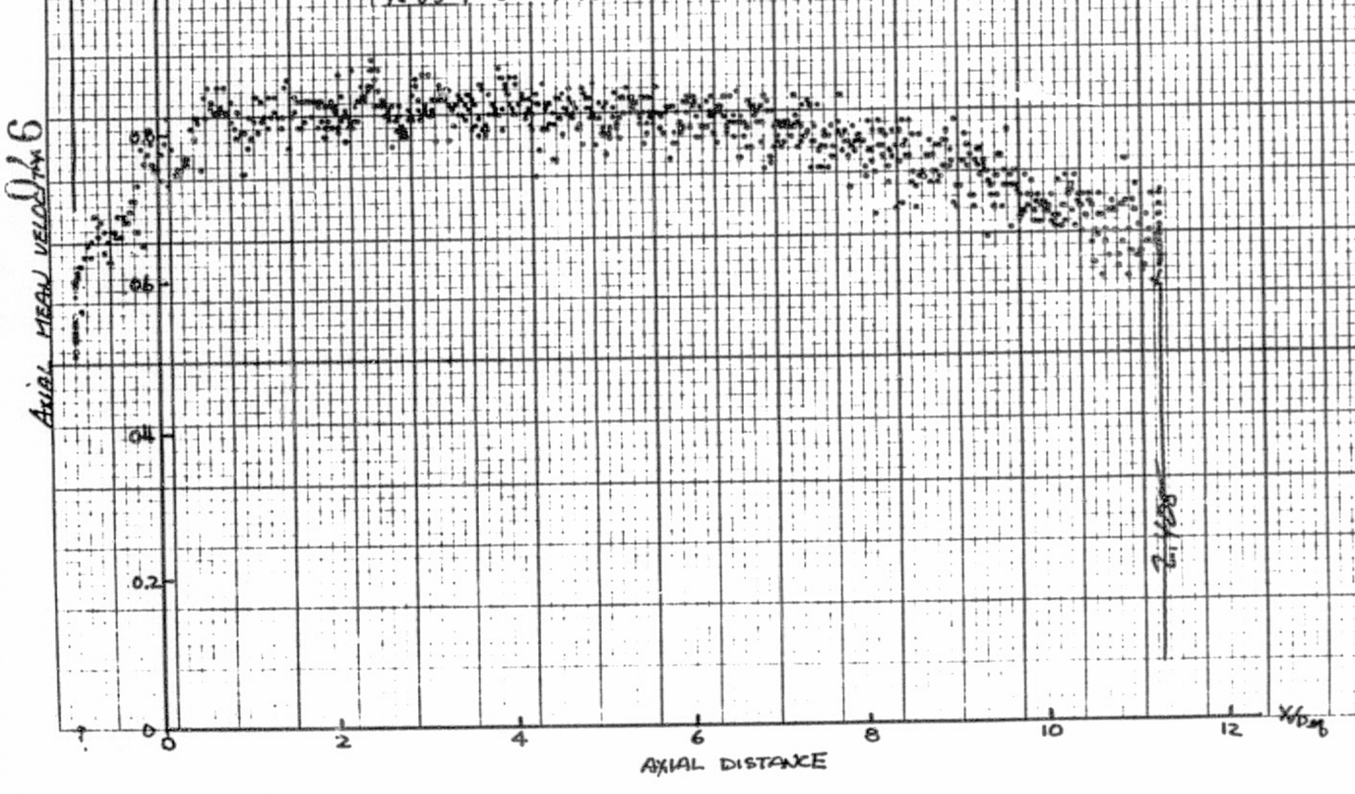
SCALE : X-AXIS= 7.07 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
649	3.335	1687	2645	1.797	1348
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1585	2356	1652	0	5.23	0.62



No. XY 1101

971

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BUFFALO, NEW YORK

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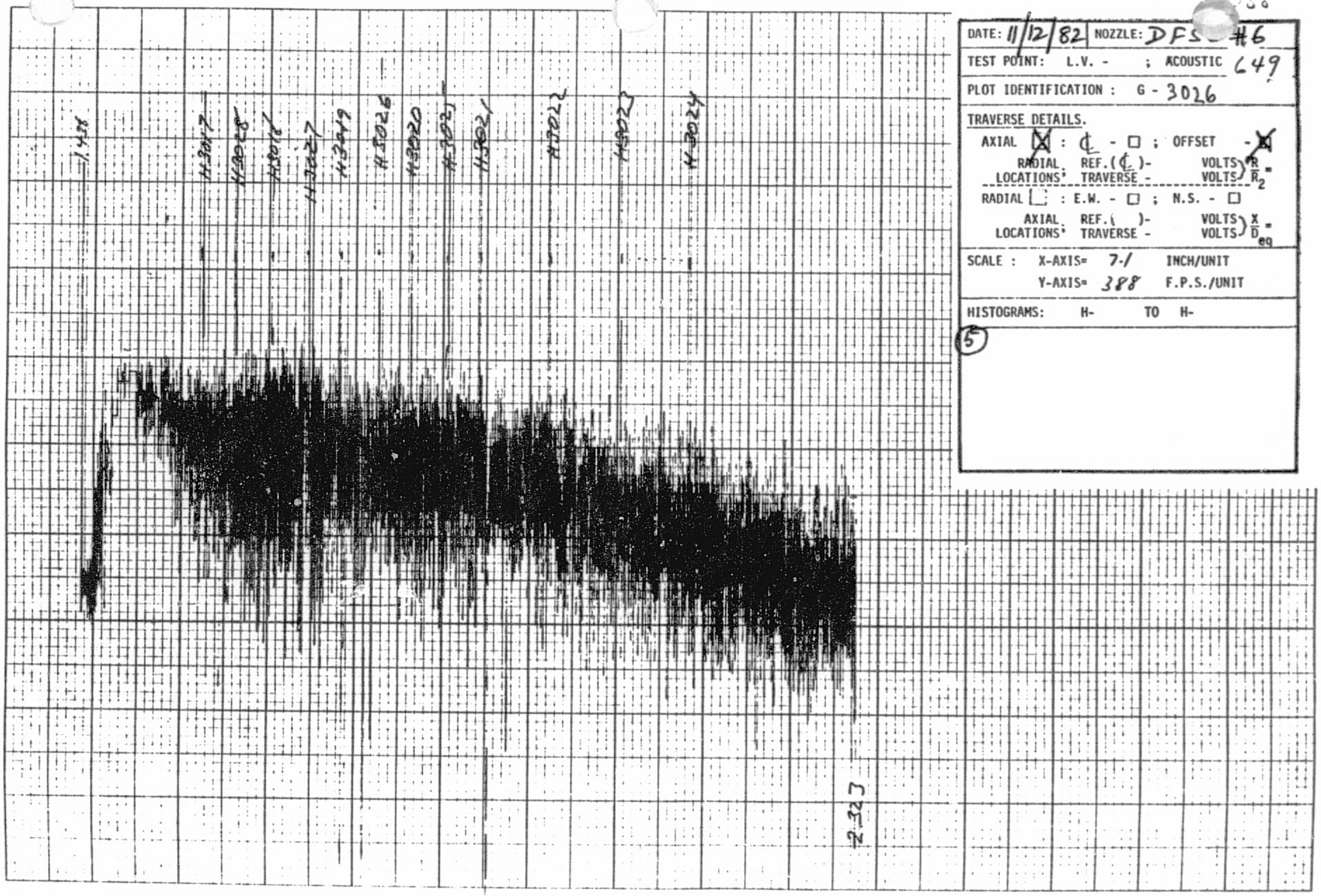


DATE: 11/12/82 NOZZLE: DFS #6

TEST POINT: L.V. - ; ACOUSTIC 649

PLOT IDENTIFICATION : G - 3026

TRAVERSE DETAILS.

AXIAL : ℄ - ; OFFSET -

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL : E.W. - ; N.S. -

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

5

DATE: 11/12/82	NOZZLE: DFSC #6
TEST POINT: L.V. - ; ACOUSTIC - 649	
PLOT IDENTIFICATION : G - 3027	

TRAVERSE DETAILS.

AXIAL ☒ : ₵ - ☐ ; OFFSET - ☒

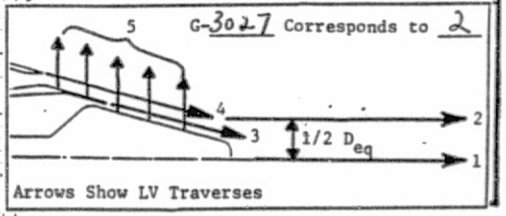
RADIAL LOCATIONS: REF.(₵)-TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

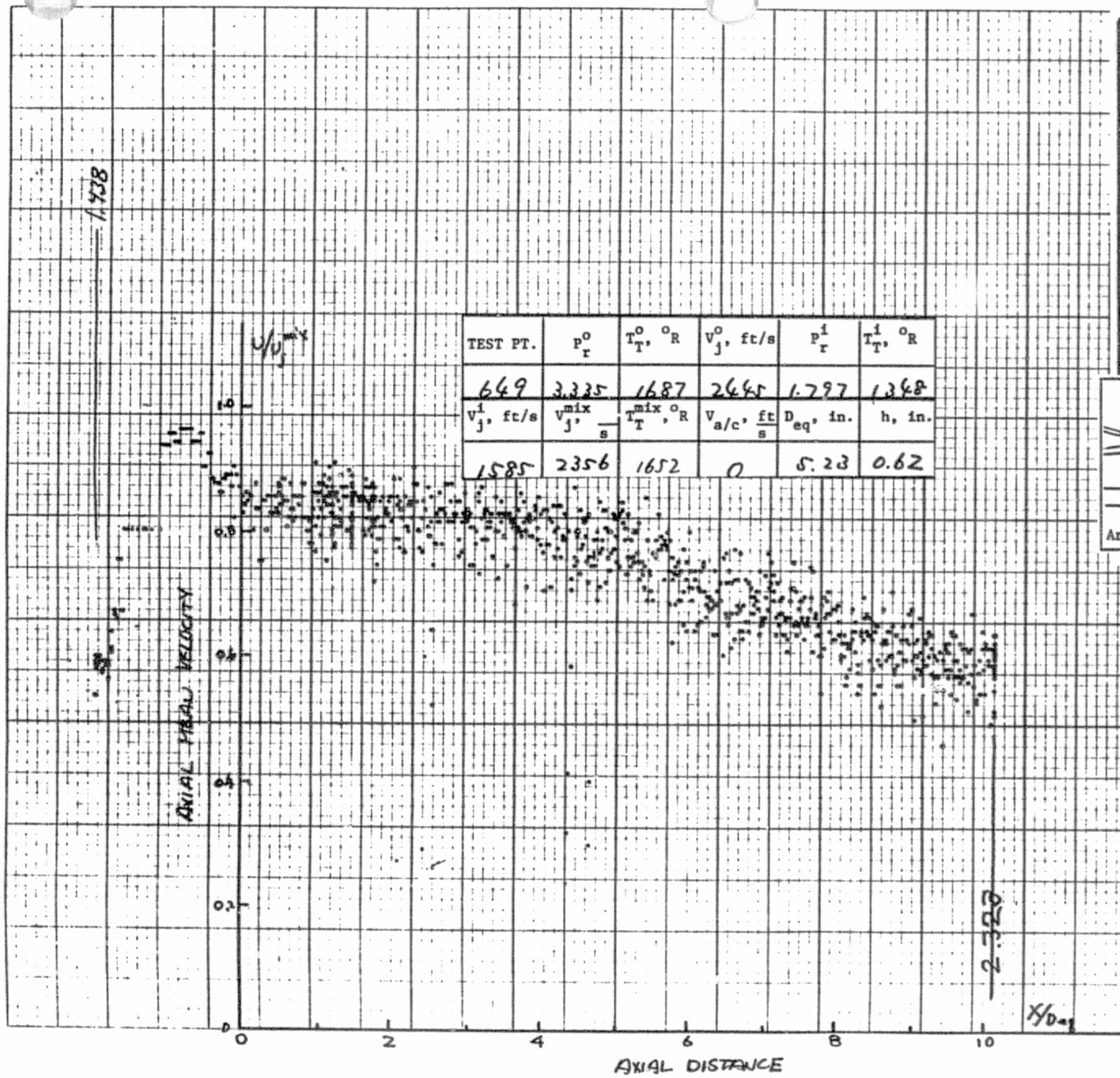
AXIAL LOCATIONS: REF.( )-TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.07 INCH/UNIT
Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
649	3.335	1687	2645	1.797	1348
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1585	2356	1652	0	5.23	0.62



NO. XY 1101

972

RECORDING CHARTS

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DATE: 11/11/82 NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC - 1619

PLOT IDENTIFICATION : G - 3000

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS) R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

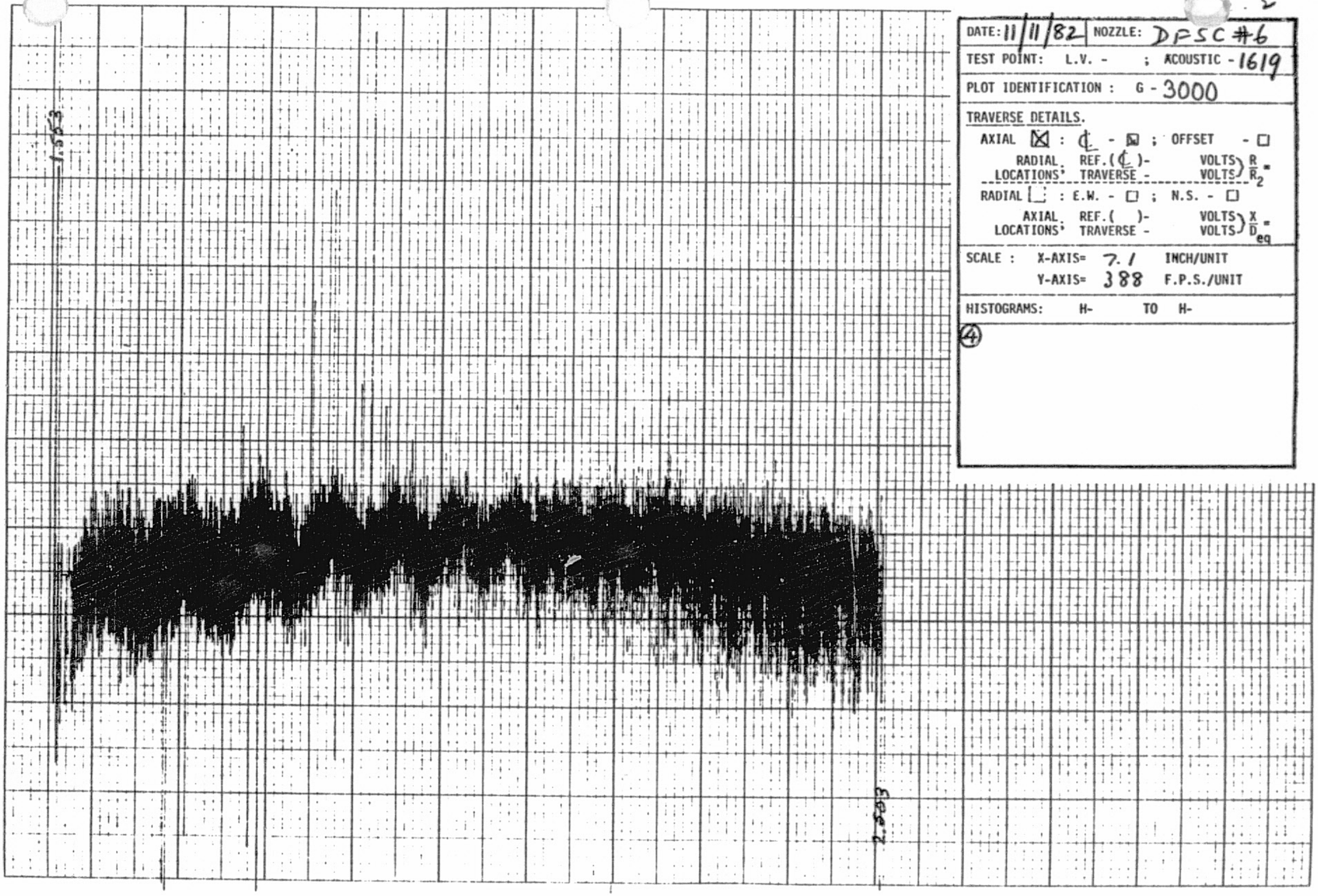
AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS) X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

4



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NO. XY 1101

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DATE: 11/11/82 NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC - 1619

PLOT IDENTIFICATION : G - 3001

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

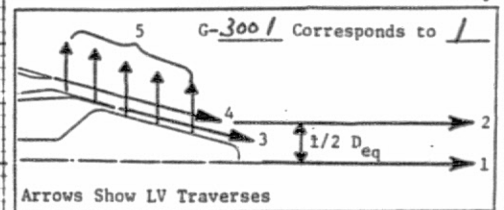
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

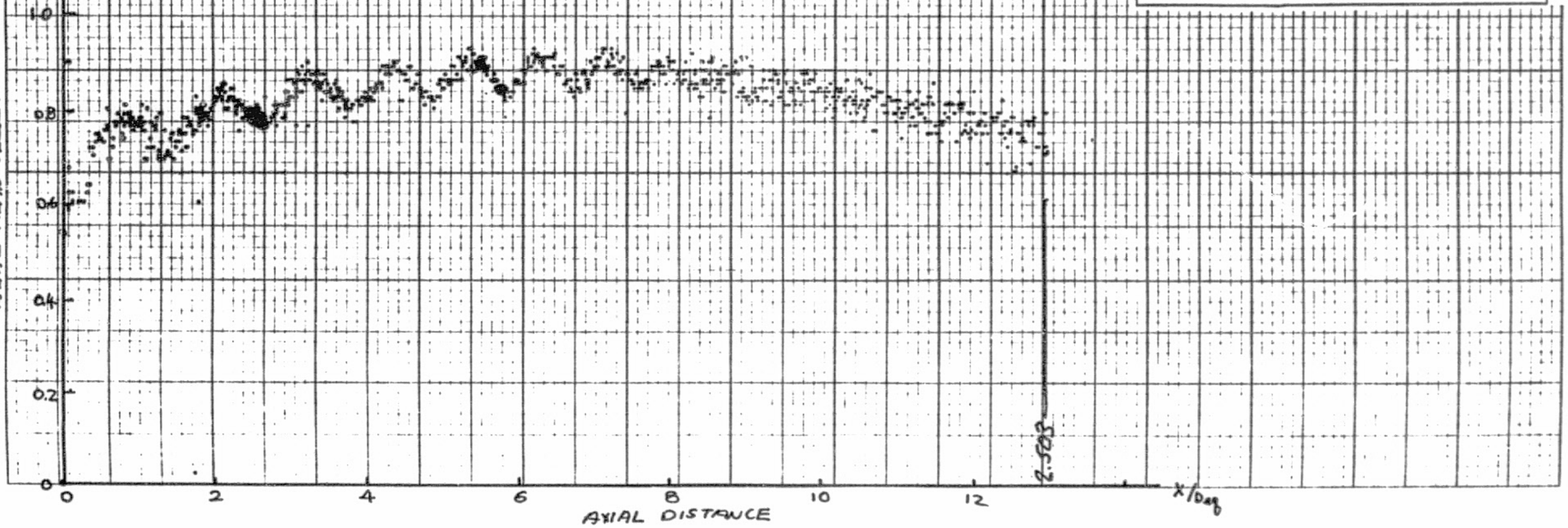
SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1619	3.397	871	1757	3.122	864
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1698	1748	870	0	5.23	0.62



NO. XY 1101

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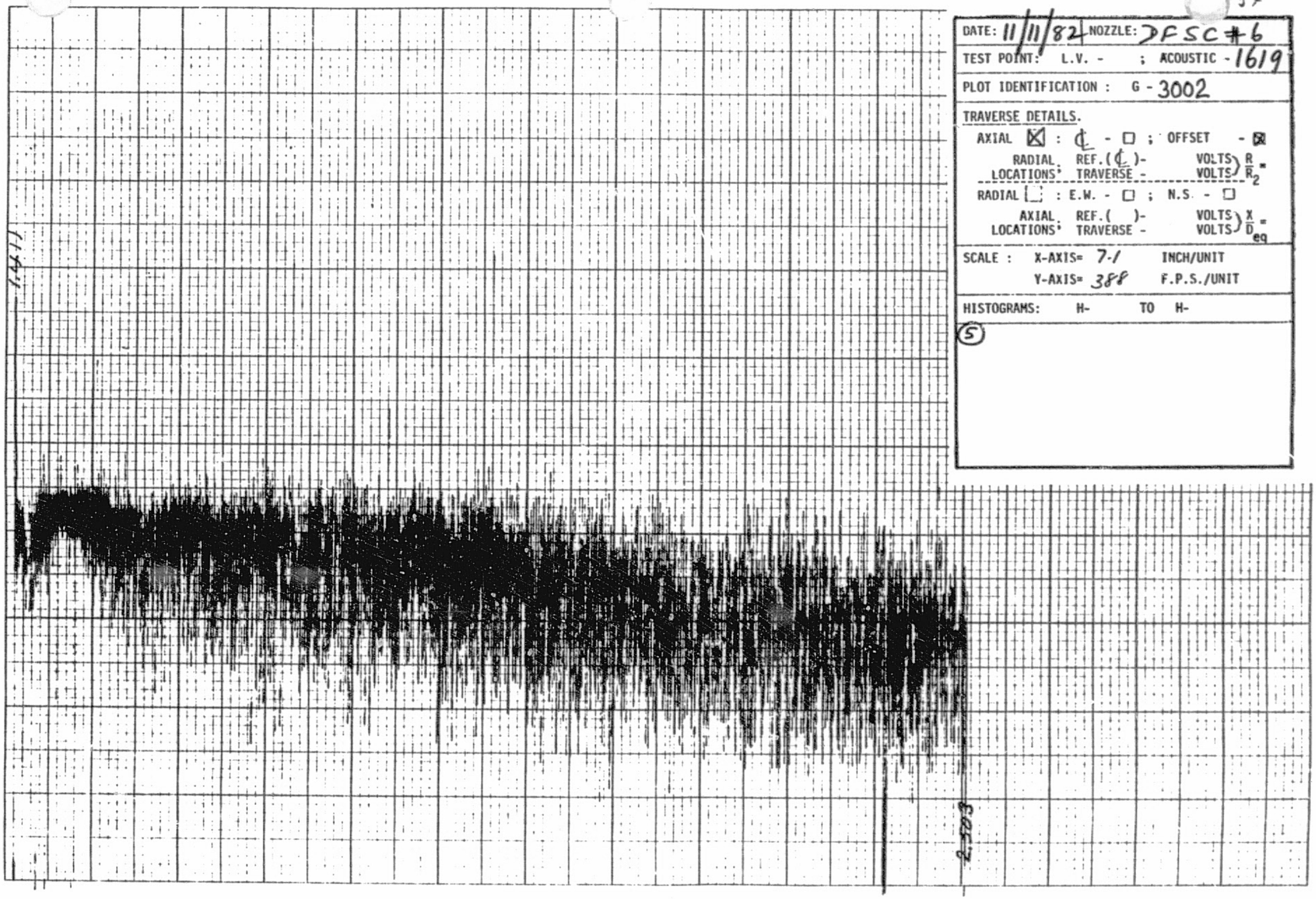

DATE: 11/11/82 NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC - 1619

PLOT IDENTIFICATION : G - 3002

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄) - VOLTS; TRAVERSE - VOLTS; $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( ) - VOLTS; TRAVERSE - VOLTS; $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

5

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DATE: 11/11/82	NOZZLE: DFSC #6
TEST POINT: L.V. - ; ACOUSTIC - 1619	
PLOT IDENTIFICATION : G - 3003	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS R/R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS X/D_{eq} =

SCALE : X-AXIS= 7.1 INCH/UNIT

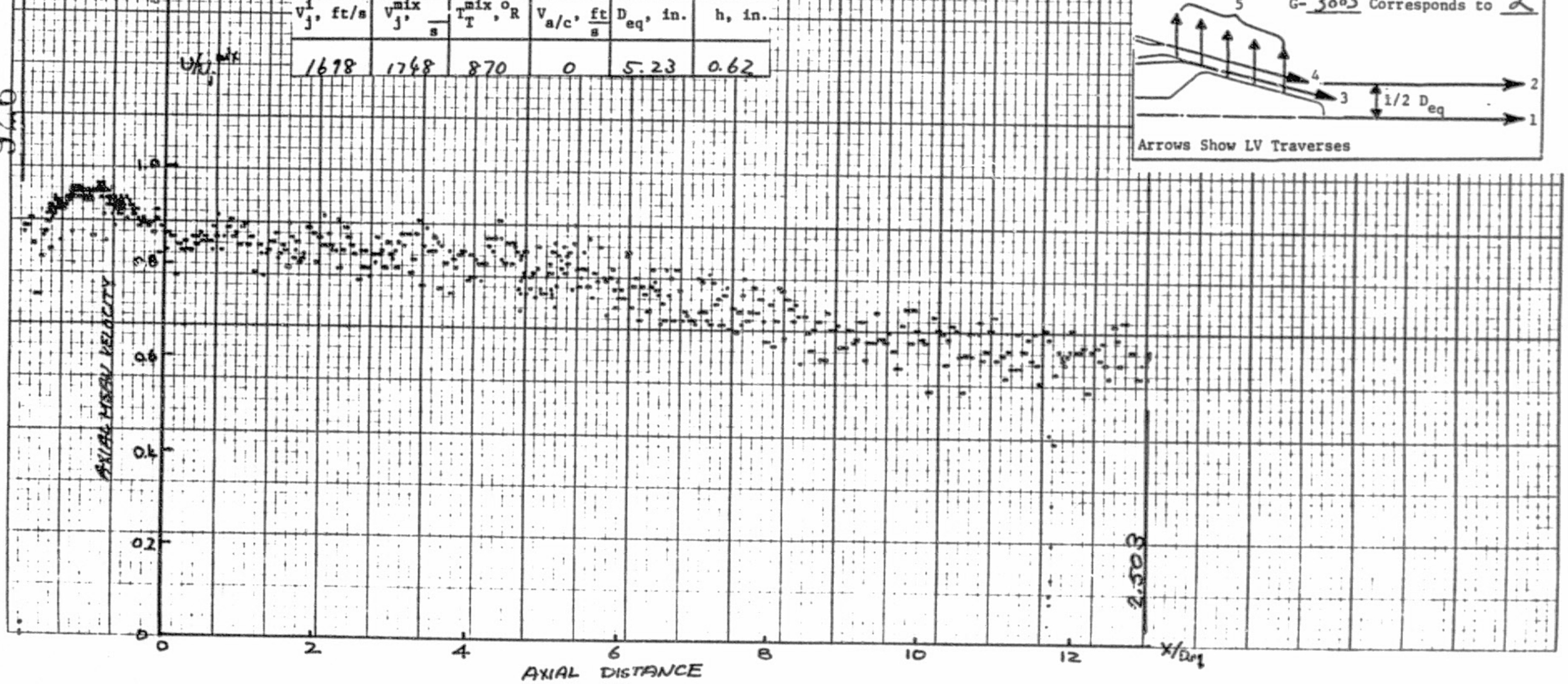
Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-3003 Corresponds to 2

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1619	3.397	871	1757	3.122	864
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1698	1748	870	0	5.23	0.62



NO. XY 1101

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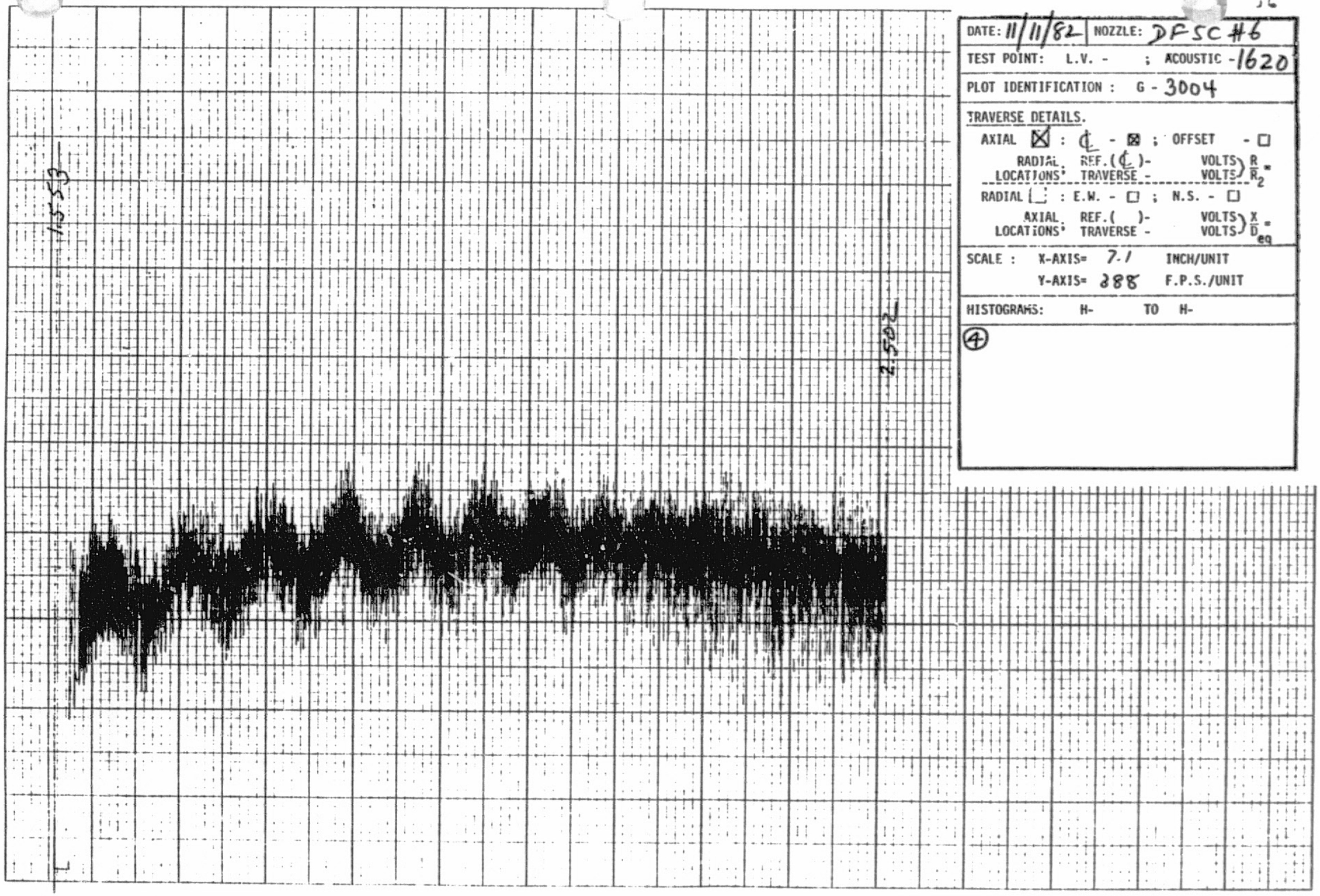

DATE: 11/11/82 NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC - 1620

PLOT IDENTIFICATION : G - 3004

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS/VOLTS $\frac{R}{R_2}$ =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS/VOLTS $\frac{X}{D_{eq}}$ =

SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

4

NO. XY 1101

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ORIGINAL PAGE IS
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DATE: 11/11/82	NOZZLE: DFSC #6
TEST POINT: L.V. - ; ACOUSTIC - 1620	
PLOT IDENTIFICATION : G - 3005	

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☒ ; OFFSET - ☐

RADIAL LOCATIONS: REF.(℄)- TRAVERSE - VOLTS) VOLTS) $\frac{R}{R_2}$ =

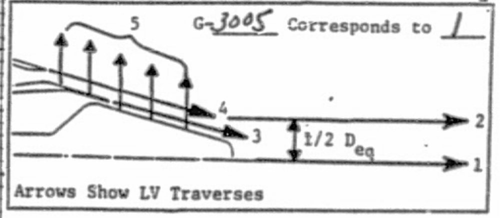
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF.( )- TRAVERSE - VOLTS) VOLTS) $\frac{X}{D_{eq}}$ =

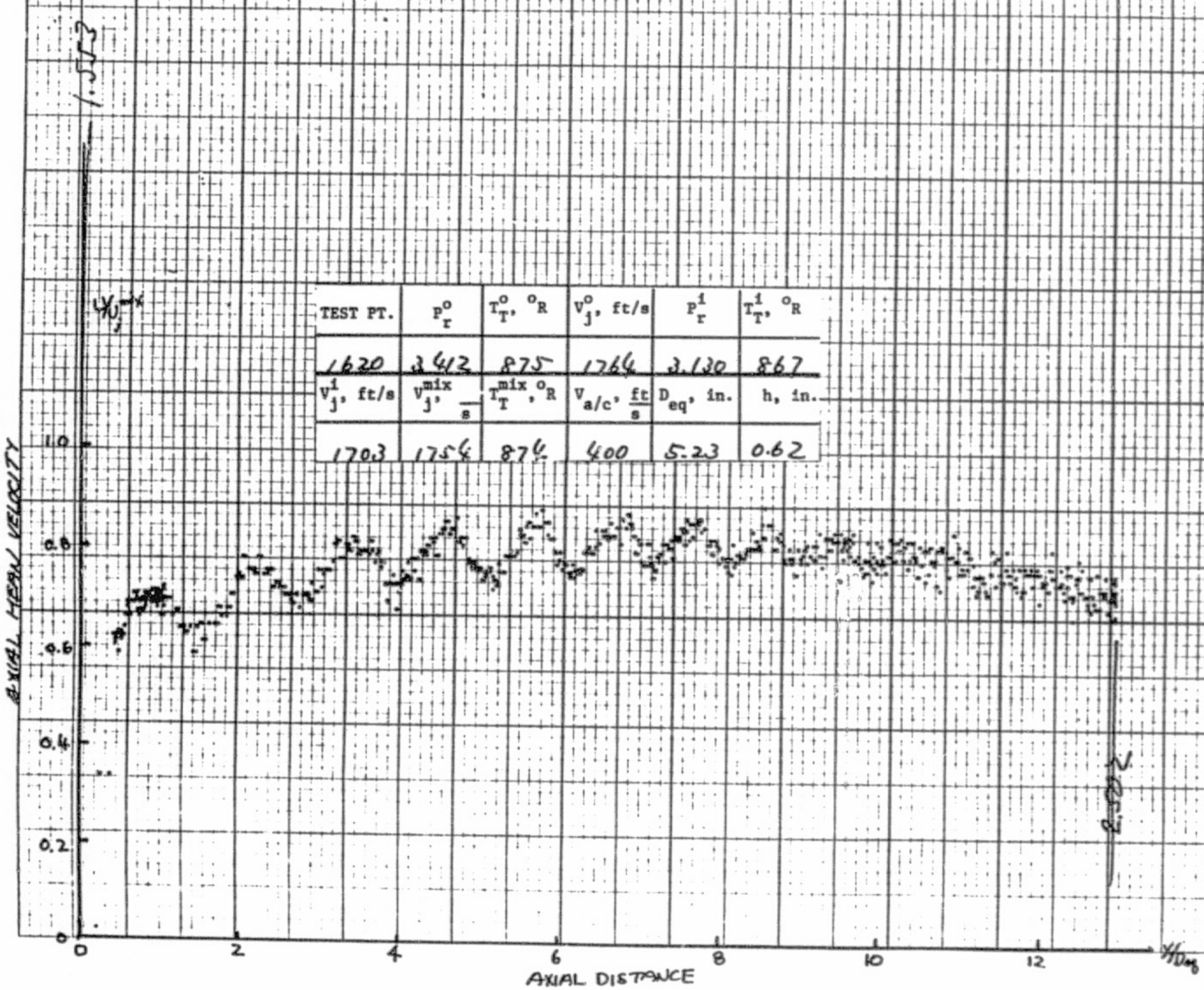
SCALE : X-AXIS= 7.1 INCH/UNIT

Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-



TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1620	3.412	875	1764	3.130	867
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1703	1754	874	400	5.23	0.62



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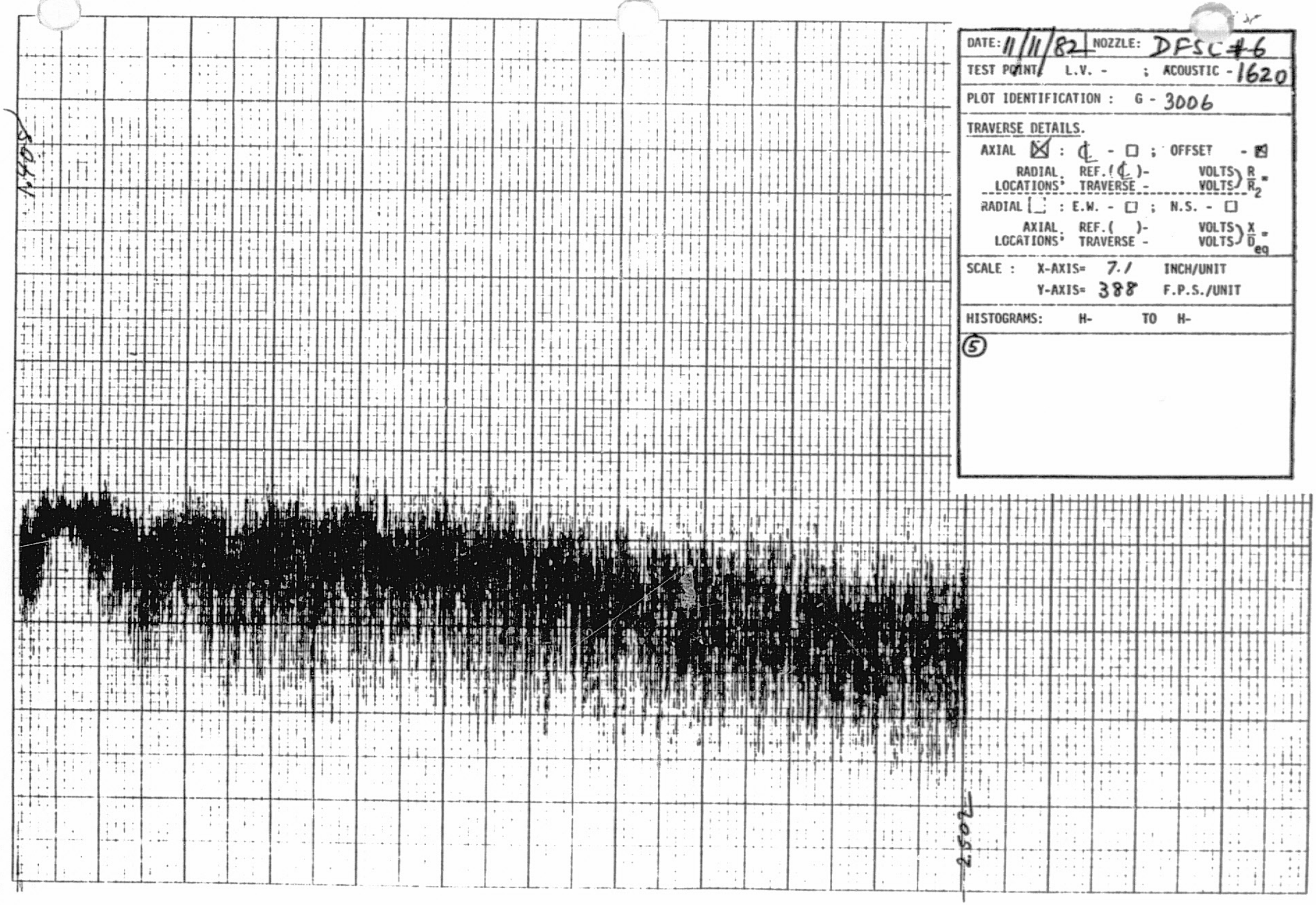

No. XY 1101

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DATE: 11/11/82 NOZZLE: DFSC #6

TEST POINT: L.V. - ; ACOUSTIC - 1620

PLOT IDENTIFICATION : G - 3007

TRAVERSE DETAILS.

AXIAL ☒ : ℄ - ☐ ; OFFSET - ☒

RADIAL LOCATIONS: REF. (℄)- TRAVERSE - VOLTS) R/R₂ =
VOLTS)

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS: REF. ( )- TRAVERSE - VOLTS) X/D_eq =
VOLTS)

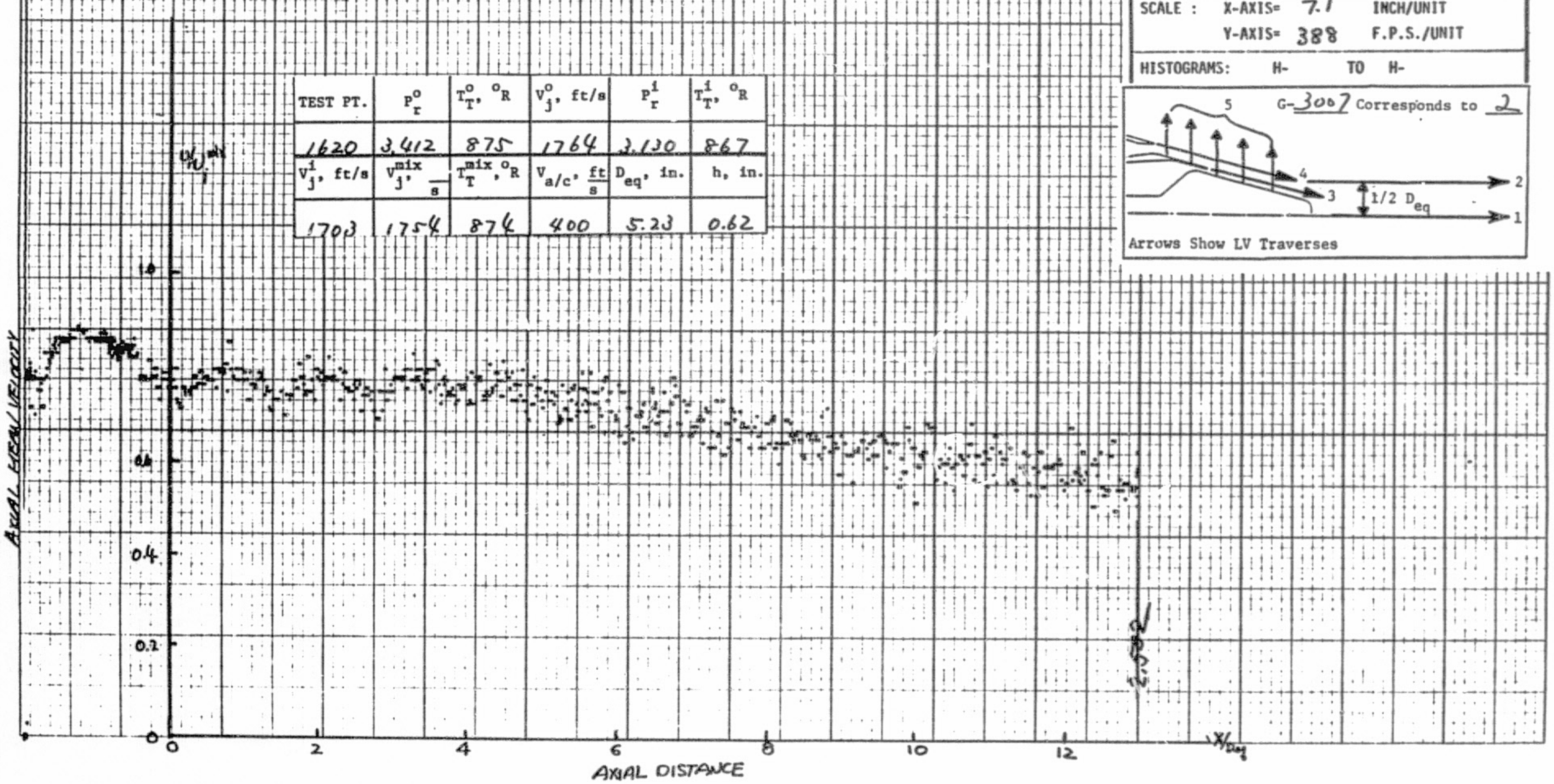
SCALE : X-AXIS= 7.1 INCH/UNIT
Y-AXIS= 388 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-3007 Corresponds to 2

Arrows Show LV Traverses

TEST PT.	P_r^o	T_T^o, °R	V_j^o, ft/s	P_r^i	T_T^i, °R
1620	3.412	875	1764	3.130	867
V_j^i, ft/s	V_j^{mix}, ft/s	T_T^{mix}, °R	$V_{a/c}$, ft/s	D_{eq}, in.	h, in.
1703	1754	874	400	5.23	0.62



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6.0 STATIC PRESSURE TEST DATA

In addition to the acoustic,LV and shadowgraph tests, static pressure measurements were performed with the coannular C-D plug nozzle (DFSC-2) and the coannular C-D suppressor nozzle (DFSC-5). The objective of these tests was to define the actual C-D operating condition. During the work effort for the companion contract NAS3-22514*, a limited number of static pressure measurements were performed in the base pressure regions of the chutes of the 20-shallow-chute suppressor C-D plug nozzle (Model 6). The objective of these tests was to assess the influence of the suppressor on the nozzle thrust coefficient. This outer stream suppressor was chosen as an outer nozzle for the suppressed outer stream coannular plug nozzle; dual convergent-divergent (DFSC-5). Since the base pressure data obtained with the Model 6 are not documented in the Comprehensive Data Report for NAS3-22514 and, furthermore, no work effort was done to perform the similar base pressure measurements with DFSC-5 in the present program, these data are presented herein along with the above mentioned static pressure data obtained in the C-D flowpath.

The static pressure probes, as installed on the outer nozzle sleeve of DFSC-2 and on the suppressor of DFSC-5, are shown in Figures 6-1 and 6-2. The locations and identifications of these probes are indicated in these figures.

Tables 6-1 and 6-2 summarize the aerodynamic flow conditions for the static pressure measurements. Those data were recorded with free-jet velocities of 0, and 400 ft/s.

Tables 6-3 and 6-4 summarize the static and base pressure data corresponding to the aerodynamic conditions of tables 6-1 and 6-2.

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*"Experimental Investigation of Shock-Cell Noise Reduction for Single-Stream Nozzles in Simulated Flight", R82AEB491; July, 1982. (Reference 4-1).

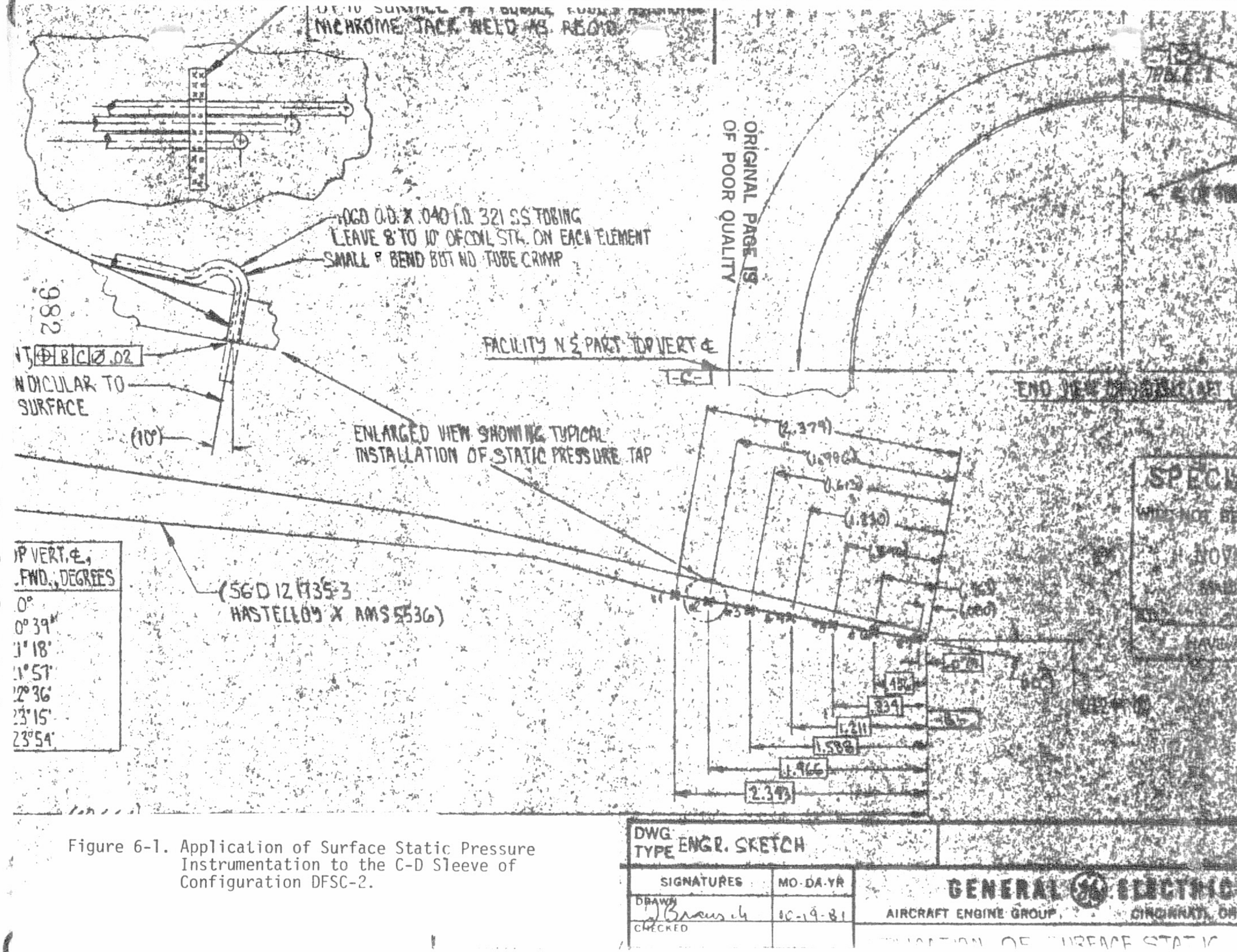

Figure 6-1. Application of Surface Static Pressure Instrumentation to the C-D Sleeve of Configuration DFSC-2.

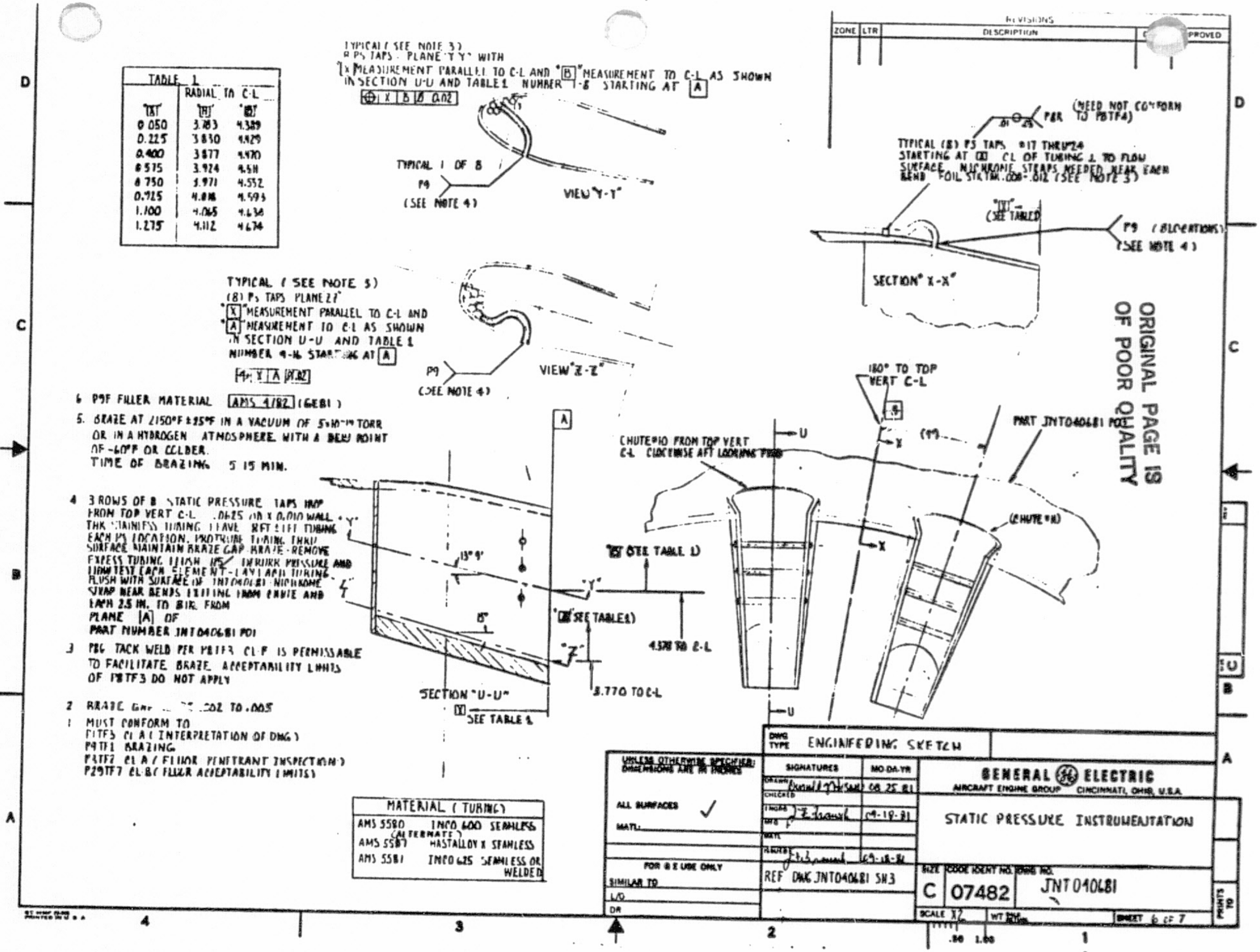

Figure 6-2. Application of Static Pressure Instrumentation to the C-D Elements of DFSC-5.

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Test Point	P_r^o	T_T^o (^oR)	V_j^o (ft/s)	P_r^i	T_T^i (^oR)	V_j^i (ft/s)	V_j^{mix} (ft/s)	T_T^{mix} (^oR)	$V_{a/c}$ (ft/s)
201	1.00	519	0	3.13	873	1708	1708	873	0
205	2.22	1691	2046	3.12	856	1689	1937	1435	
209	2.53	1704	2198	3.12	856	1689	2055	1466	
211	2.81	1683	2288	3.12	857	1691	2133	1469	
213	3.04	1695	2370	3.12	858	1691	2205	1491	
215	3.23	1680	2412	3.12	859	1693	2245	1489	
217	3.27	1685	2427	3.12	865	1699	2260	1497	
219	3.32	1679	2436	3.12	862	1696	2268	1494	
221	3.40	1687	2461	3.12	869	1702	2292	1505	
223	3.49	1676	2475	3.12	852	1685	2302	1495	
225	3.63	1684	2512	3.12	857	1690	2337	1508	
227	3.82	1697	2563	3.12	860	1694	2385	1526	
229	4.02	1708	2611	3.12	870	1703	2433	1544	
231	3.16	1690	2400	3.12	859	1693	2233	1494	
1219	3.40	877	1764	3.13	851	1687	1750	872	
202	1.00	519	0	3.12	849	1682	1682	849	400
210	2.52	1708	2194	3.11	871	1703	2057	1474	
212	2.77	1696	2281	3.12	869	1702	2130	1481	
214	3.07	1702	2382	3.12	874	1707	2219	1502	
216	3.23	1702	2429	3.12	866	1700	2260	1508	
218	3.27	1712	2446	3.12	869	1702	2274	1517	
220	3.33	1695	2450	3.12	873	1705	2282	1509	
222	3.40	1691	2463	3.12	878	1711	2296	1510	
224	3.51	1697	2495	3.12	880	1713	2326	1520	
226	3.62	1708	2529	3.13	885	1719	2358	1534	
228	3.81	1715	2577	3.12	872	1705	2399	1543	
230	4.02	1696	2604	3.12	873	1706	2429	1536	
1220	3.41	875	1763	3.13	852	1687	1750	870	

Table 6-1. Summary of Aerodynamic Flow Conditions of Static Pressure Tests: DFSC-2, Coannular C-D Nozzle (Truncated Plug).

Test Point	P^o_r	T^o_T (^oR)	V^o_j (ft/s)	P^i_r	T^i_T (^oR)	V^i_j (ft/s)	V^{mix}_j (ft/s)	T^{mix}_T (^oR)	$V_{a/c}$ (ft/s)
501	2.73	1700	2273	2.91	884	1672	2134	1512	0
505	2.96	1727	2367	2.92	848	1639	2205	1531	
507	3.03	1728	2389	2.92	846	1636	2224	1535	
509	3.08	1723	2401	2.92	849	1640	2236	1534	
511	3.13	1725	2419	2.92	852	1644	2254	1540	
513	3.18	1710	2421	2.91	861	1648	2260	1534	
515	3.23	1711	2435	2.91	849	1638	2271	1533	
517	3.32	1707	2456	2.91	850	1639	2292	1534	
519	3.52	1723	2518	2.91	867	1656	2353	1559	
1511	3.23	877	1732	2.91	861	1651	1719	874	
502	2.71	1710	2272	2.91	852	1640	2122	1507	400
506	2.96	1715	2359	2.91	848	1637	2199	1523	
508	3.03	1716	2380	2.91	849	1637	2218	1527	
510	3.08	1724	2401	2.90	853	1641	2238	1537	
512	3.13	1718	2412	2.91	857	1646	2250	1536	
514	3.18	1724	2431	2.91	856	1644	2267	1543	
516	3.23	1724	2444	2.91	858	1646	2280	1545	
518	3.32	1726	2470	2.91	865	1653	2306	1553	
520	3.53	1742	2533	2.91	874	1661	2366	1576	
1514	3.22	876	1729	2.91	837	1627	1712	870	

Table 6-2. Summary of Aerodynamic Flow Conditions of Static Pressure Tests: DFSC-5, Coannular Suppressor C-D Nozzle.

Table 6-3. Static Pressure Test Data for Model DFSC-2: Coannular C-D Nozzle with Truncated Plug.

P_s, psia - Static

Test Point	201	205	209	211	213	215	217	219	221	223	225	227	229	231	1219*
P_s Tap # 1	14.427	16.779	19.094	21.175	23.071	24.452	24.810	25.183	25.729	26.541	27.550	28.998	30.532	23.475	25.615
2	14.410	13.824	15.727	17.363	18.854	19.964	20.263	20.543	21.015	21.647	22.471	23.686	24.973	19.580	20.537
3	14.438	12.815	14.566	16.057	17.469	18.490	18.763	19.028	19.444	20.070	20.854	21.954	23.164	18.145	19.572
4	14.418	11.473	12.989	16.344	15.593	16.514	16.756	16.988	17.366	17.914	18.605	19.606	20.608	16.254	17.382
5	14.413	10.958	12.456	13.768	14.964	15.860	16.088	16.328	16.682	17.193	17.859	18.815	19.800	16.575	16.414
6	14.420	10.749	12.211	13.440	14.631	15.501	15.733	15.986	16.331	16.853	17.559	18.526	19.566	15.250	16.407
7	14.423	12.568	12.083	13.011	14.148	15.010	15.267	15.481	15.833	16.354	17.046	17.986	18.981	14.767	15.777
P_{amb}, psia	14.418	14.421	14.400	14.346	14.423	14.411	14.424	14.393	14.377	14.419	14.416	14.397	14.337	14.430	14.413

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P_s, psia - Simulated Flight

Test Point	202	210	212	214	216	218	220	222	224	226	228	230	1220*		
P_s Tap # 1	14.479	19.474	21.434	23.661	24.957	25.207	25.658	26.232	27.121	27.958	29.490	31.101	26.140		
2	14.499	15.583	17.146	18.913	20.025	20.205	20.564	21.021	21.756	22.452	23.726	25.063	20.868		
3	14.482	14.345	15.771	17.374	18.366	18.524	18.878	19.319	19.985	20.577	21.768	23.037	19.452		
4	14.501	12.938	14.276	15.713	16.605	16.734	17.033	17.440	18.034	18.553	19.700	20.780	17.536		
5	14.499	12.272	13.560	14.918	15.769	15.905	16.18[illegible]	16.559	17.131	17.629	18.655	19.747	16.568		
6	14.504	11.910	13.189	14.524	15.363	15.494	15.774	16.156	16.725	17.228	18.249	19.413	16.413		
7	14.498	11.618	12.809	14.110	14.932	15.038	15.326	15.690	16.255	16.745	17.751	18.843	15.821		
P_{amb}, psia	14.454	14.429	14.442	14.456	14.447	14.397	14.439	14.458	14.462	14.404	14.444	14.41[illegible]	14.420		

* With Low Temperature Outer Flow

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Table 6-4. Static Pressure Test Data for Model DFSC-5: Coannular Suppressor C-D Nozzle - Static.

	Test Point	501	505	507	509	511	513	515	517	519	1511*
MID-SPAN	Tap # #16	14.699	15.156	15.393	15.540	15.703	15.894	16.066	16.384	17.086	16.581
	#17	13.499	14.306	14.562	14.769	15.007	15.236	15.448	15.770	16.620	14.577
	#18	12.970	14.007	14.279	14.492	14.733	14.999	15.260	15.592	16.354	14.313
	#19	13.135	14.306	14.510	14.634	14.747	14.909	15.181	15.572	16.372	15.216
	#20	12.772	14.629	14.720	14.824	14.923	14.753	14.791	14.911	15.213	14.525
	#21	21.239	22.281	22.839	23.302	23.773	24.417	24.815	25.435	26.858	23.752
	#22	27.183	29.396	30.120	30.656	31.227	31.731	32.199	33.014	34.842	31.569
	#23	26.008	28.465	29.072	29.488	29.903	30.234	30.687	31.470	33.156	31.015
CHUTE HUB	#24	17.142	18.552	18.935	19.223	19.528	19.815	20.136	20.650	21.810	19.707
	#25	18.239	19.807	20.255	20.577	20.914	21.248	21.584	22.161	23.442	21.214
	#26	23.929	25.859	26.476	26.849	27.284	27.761	28.192	28.965	30.650	27.790
	#27	29.556	31.976	32.736	33.268	33.785	14.501	34.912	35.883	38.004	34.717
	#28	30.798	33.355	34.129	34.686	35.199	35.801	36.373	37.377	39.576	36.154
	#29	26.594	28.763	29.421	29.898	30.277	30.906	31.365	32.252	34.176	31.119
	#30	19.800	21.468	21.968	22.316	22.623	23.046	23.394	24.025	25.395	22.872
	#31	17.364	18.776	19.191	19.464	19.730	20.109	20.386	20.947	22.140	20.079
DIVERGENT FLAP	#32	27.038	29.261	29.943	30.443	30.898	31.417	31.915	32.807	34.744	31.540
	#33	27.384	29.628	30.308	30.818	31.270	31.792	32.316	33.207	35.148	31.855
	#34	21.807	23.593	24.128	24.515	24.842	25.294	25.700	26.388	27.937	25.398
	#35	15.074	16.349	16.690	16.941	17.127	17.458	17.699	18.165	19.180	17.076
	#36	15.369	15.352	15.351	15.351	15.353	15.339	15.352	15.353	15.352	15.369
	#37	14.521	14.505	14.506	18.294	18.440	18.913	19.214	19.685	—	18.726
	#38	14.824	16.000	16.333	16.604	16.883	17.164	17.449	17.912	18.938	16.996
	#39	14.521	13.622	13.910	14.506	14.322	14.510	14.733	15.090	15.918	14.175
	P_{amb}, psia	14.505	14.474	14.494	14.483	14.420	14.485	14.474	14.492	14.481	14.503

* With Low Temperature Outer Flow

Table 6- 4.(Concluded). Static Pressure Test Data for Model DFSC-5: Coannular Suppressor C-D Nozzle- Simulated Flight.

P_s, psia

	Test Point	502	506	508	510	512	514	516	518	520	1514*
MID-SPAN	Tap # #16	14.265	14.755	14.730	15.075	15.196	15.397	15.545	15.818	16.441	16.633
	#17	12.994	13.854	14.169	14.319	14.464	14.709	14.899	15.239	15.902	14.094
	#18	12.387	13.479	13.761	14.020	14.216	14.490	14.686	15.065	15.677	14.010
	#19	13.095	14.195	14.473	14.693	14.824	15.065	15.169	15.500	16.205	15.243
	#20	13.137	13.896	14.200	14.441	14.629	14.913	15.132	15.575	16.611	14.716
	#21	20.592	22.619	23.186	23.669	24.053	24.484	24.917	25.779	27.108	23.321
	#22	26.271	29.021	29.728	30.298	30.794	31.346	31.888	32.771	34.648	31.373
	#23	26.094	28.234	28.834	29.308	29.680	30.189	30.579	31.298	32.965	31.106
CHUTE HUB	#24	16.761	18.257	18.654	18.998	19.255	19.599	19.872	20.422	21.524	19.569
	#25	17.836	19.458	19.900	20.268	20.545	20.910	21.251	21.813	23.127	21.062
	#26	23.520	25.638	26.268	26.733	27.023	27.578	28.003	28.742	30.494	27.661
	#27	29.167	31.828	32.619	33.221	33.623	34.326	34.840	35.686	37.955	34.613
	#28	30.369	33.121	33.959	34.559	34.996	35.684	36.229	37.197	39.443	36.057
	#29	26.231	28.588	29.275	29.813	30.184	30.794	31.273	32.117	34.092	31.036
	#30	19.356	21.068	21.572	21.984	22.234	22.686	23.040	23.619	25.036	22.701
	#31	16.936	18.403	18.827	19.176	19.381	19.783	20.091	20.613	21.790	19.936
DIVERGENT FLAP	#32	26.657	29.073	29.787	30.326	30.691	31.318	31.788	32.598	34.633	31.827
	#33	27.040	29.470	30.175	30.722	31.087	31.720	32.197	33.033	35.053	31.790
	#34	21.480	23.378	23.957	24.413	24.686	25.171	25.573	26.224	27.825	25.273
	#35	14.639	15.910	16.302	16.588	16.738	17.111	17.359	17.801	18.846	16.939
	#36	15.493	15.484	15.487	15.500	15.506	15.498	15.508	15.500	15.501	15.525
	#37	15.982	17.449	17.852	18.208	18.489	18.800	19.005	19.598	—	18.581
	#38	14.177	15.470	15.840	16.153	16.407	16.692	16.970	17.391	18.361	16.806
	#39	12.490	13.417	13.705	13.961	14.150	14.383	14.581	14.943	15.584	13.986
	P_{amb}, psia	14.455	14.459	14.492	14.511	14.427	14.507	14.517	14.496	14.507	14.505

* With Low Temperature Outer Flow

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7.0 SHADOWGRAPH TESTS

To aid in a better understanding of shock cell noise and the development of an analytical prediction model for shock noise from the coannular plug nozzle, flow visualization shadowgraph tests were conducted in addition to the laser velocimeter measurements.

A total of eighty-four (84) shadowgraph photographs were taken with twenty-one (21) plumes. Approximately half of these photographs were obtained with a free-jet velocity of 400 ft/s. In the present report, only meaningful shadowgraph photographs of sixty-two (62) are presented.

Subsection 7.1 contains the test matrix and corresponding aerodynamic flow conditions under which shadowgraph tests were conducted along with a summary of shadowgraph tests, as presented in Tables 7-1 through 7-5. Shadowgraph photographs are presented in Subsection 7.2. The shadowgraph number shown above each photograph corresponds to the "photo I.D." indicated in Tables 7-1 through 7-5.

7.1 Test Matrix and Aerodynamic Flow Conditions of Test Points

Table 7-1. Test Details of Shadowgraph Photographs with Baseline Coannular Convergent Nozzle (DFSC-1).

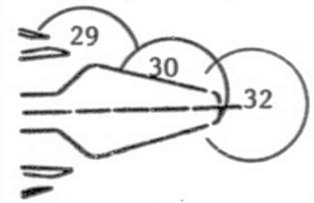
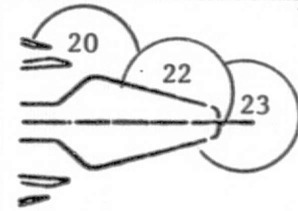
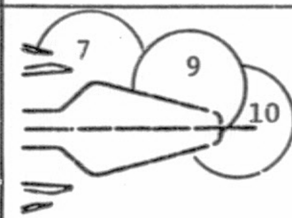
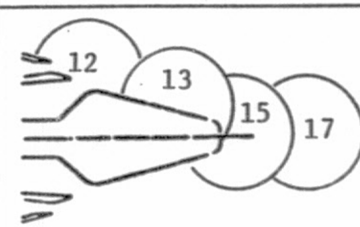
Test Point	Aerodynamic Flow Conditions							Summary of Shadowgraph Photo Tests			
	P_r^o	T_T^o (°R)	V_j^o (fps)	P_r^i	T_T^i (°R)	V_j^i (fps)	V_{ac} (fps)	Photo I.D.	Shadowgraph Photo Center Location x (in.)	y (in.)	Flow Field Covered by Shadowgraph Photos
119	3.32	1686	2441	3.12	855	1688	0	29	-7.44	3.75	
								30	-0.01	3.75	
								32	3.46	0	
120	3.33	1699	2452	3.13	869	1703	400	20	-6.85	3.27	
								22	0.45	3.27	
								23	3.95	0	
1119	3.41	864	1753	3.13	844	1680	0	7	-7.55	3.41	
								9	3.85	0	
								10	12.05	0	
1120	3.41	880	1768	3.13	866	1701	400	12	-7.55	3.52	
								13	0.65	3.52	
								15	4.05	0	
								17	12.35	0	

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Table 7-1. Concluded

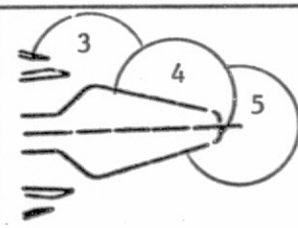
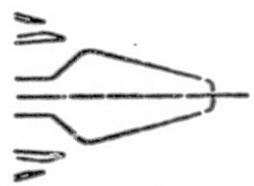
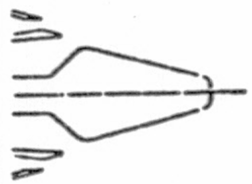
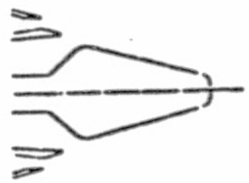
Test Point	Aerodynamic Flow Conditions							Summary of Shadowgraph Photo Tests			
	P_r^o	T_T^o (°R)	V_j^o (fps)	P_r^i	T_T^i (°R)	V_j^i (fps)	V_{ac} (fps)	Photo I.D.	Shadowgraph Photo Center Location x (in.)	Shadowgraph Photo Center Location y (in.)	Flow Field Covered by Shadowgraph Photos
5119	3.408	878	1766	1.609	1085	1289	0	3	-7.45	3.44	
								4	0.65	3.44	
								5	4.25	0	
											
											
											

Table 7-2. Test Details of Shadowgraph Photographs with Coannular C-D Nozzle (truncated Plug; DFSC-2).

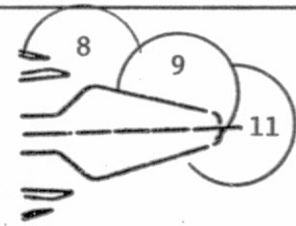
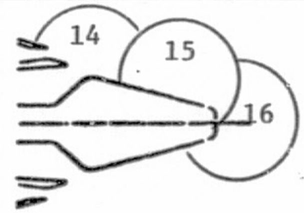
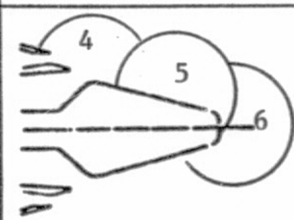
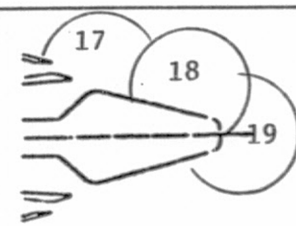
Test Point	Aerodynamic Flow Conditions							Summary of Shadowgraph Photo Tests			
	P_r^o	T_T^o (°R)	V_j^o (fps)	P_r^i	T_T^i (°R)	V_j^i (fps)	V_{ac} (fps)	Photo I.D.	Shadowgraph Photo Center Location x (in.)	Shadowgraph Photo Center Location y (in.)	Flow Field Covered by Shadowgraph Photos
219	3.32	1679	2436	3.12	862	1696	0	8 9 11	-3.76 3.25 4.03	3.06 3.06 0	
220	3.33	1695	2450	3.12	873	1705	400	14 15 16	-3.76 3.25 4.03	3.06 3.06 0	
1219	3.40	877	1764	3.13	851	1687	0	4 5 6	-3.97 2.19 3.60	3.03 3.03 0	
1220	3.41	875	1763	3.13	852	1687	400	17 18 19	-3.97 2.19 3.60	3.32 3.32 0	

Table 7-2. Concluded

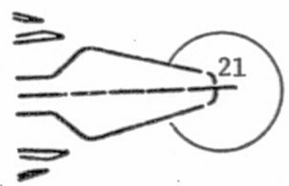
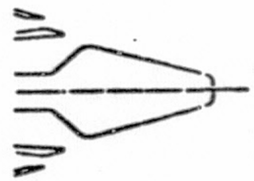
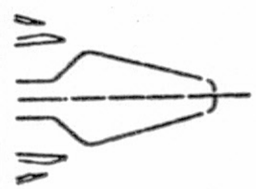
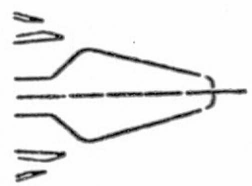
Test Point	Aerodynamic Flow Conditions							Summary of Shadowgraph Photo Tests			
	P_r^o	T_T^o (°R)	V_j^o (fps)	P_r^i	T_T^i (°R)	V_j^i (fps)	V_{ac} (fps)	Photo I.D.	Shadowgraph Photo Center Location x (in.)	Shadowgraph Photo Center Location y (in.)	Flow Field Covered by Shadowgraph Photos
5219	3.415	557	1408	3.146	862	1700	0	21	-4.96	0	
											
											
											

Table 7-3. Test Details of Shadowgraph Photographs with Coannular C-D Nozzle (Extended Plug; DFSC-3).

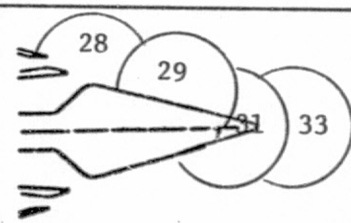
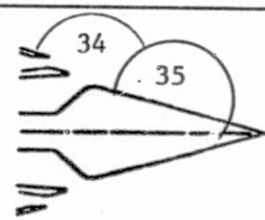
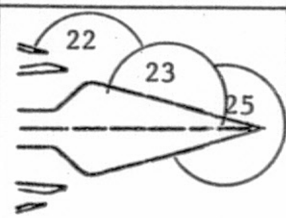
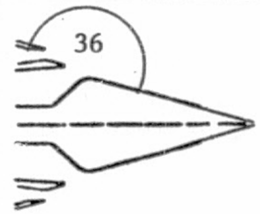
Test Point	Aerodynamic Flow Conditions							Summary of Shadowgraph Photo Tests			
	P_r^o	T_T^o (°R)	V_j^o (fps)	P_r^i	T_T^i (°R)	V_j^i (fps)	V_{ac} (fps)	Photo I.D.	Shadowgraph Photo Center Location x (in.)	Shadowgraph Photo Center Location y (in.)	Flow Field Covered by Shadowgraph Photos
319	3.32	1688	2442	3.13	861	1696	0	28	-6.52	3.17	
								29	-0.36	3.17	
								31	1.05	0	
								33	8.13	0	
320	3.33	1698	2451	3.13	875	1710	400	34	-6.52	3.17	
								35	1.05	0	
1319	3.42	871	1761	3.12	854	1688	0	22	-7.01	3.00	
								23	-0.93	3.00	
								25	0.49	0	
1320	3.42	878	1767	3.13	856	1692	400	36	-7.01	3.37	

Table 7-4. Test Details of Shadowgraph Photographs with Coannular Suppressor Convergent Nozzle (DFSC-4).

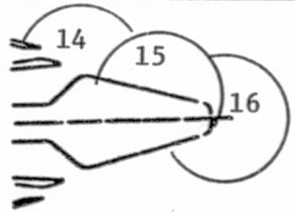
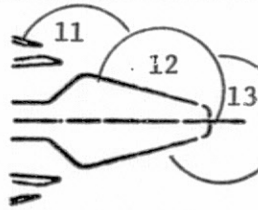
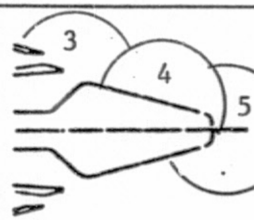
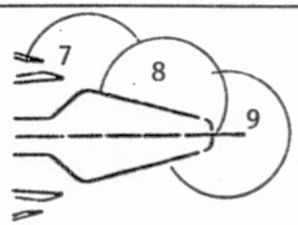
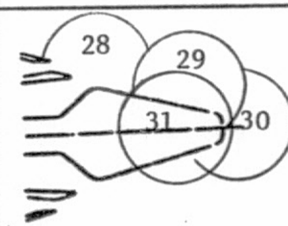
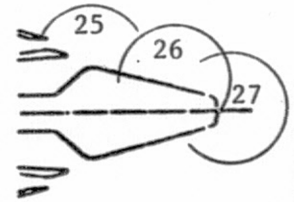
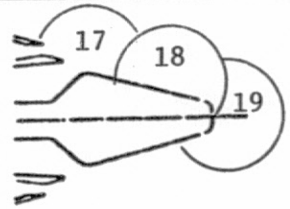
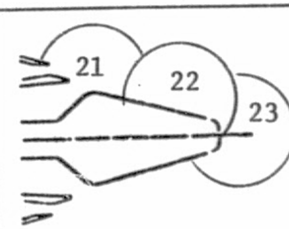
Test Point	Aerodynamic Flow Conditions							Summary of Shadowgraph Photo Tests			
	P_r^o	T_T^o (°R)	V_j^o (fps)	P_r^i	T_T^i (°R)	V_j^i (fps)	V_{ac} (fps)	Photo I.D.	Shadowgraph Photo Center Location x (in.)	Shadowgraph Photo Center Location y (in.)	Flow Field Covered by Shadowgraph Photos
415	3.14	1715	2411	2.90	872	1658	0	14 15 16	-6.38 0.70 2.19	3.74 3.74 0	
416	3.14	1708	2407	2.91	866	1654	400	11 12 13	-6.02 1.05 2.19	3.74 3.74 0	
1415	3.22	844	1687	2.90	848	1634	0	3 4 5	-6.31 0.91 2.54	3.55 3.55 0	
1416	3.22	871	1725	2.91	846	1634	400	7 8 9	-6.38 0.84 2.89	3.55 3.55 0	

Table 7-5. Details of Shadowgraph Photographs with Coannular Suppressor C-D Nozzle (DFSC-5).

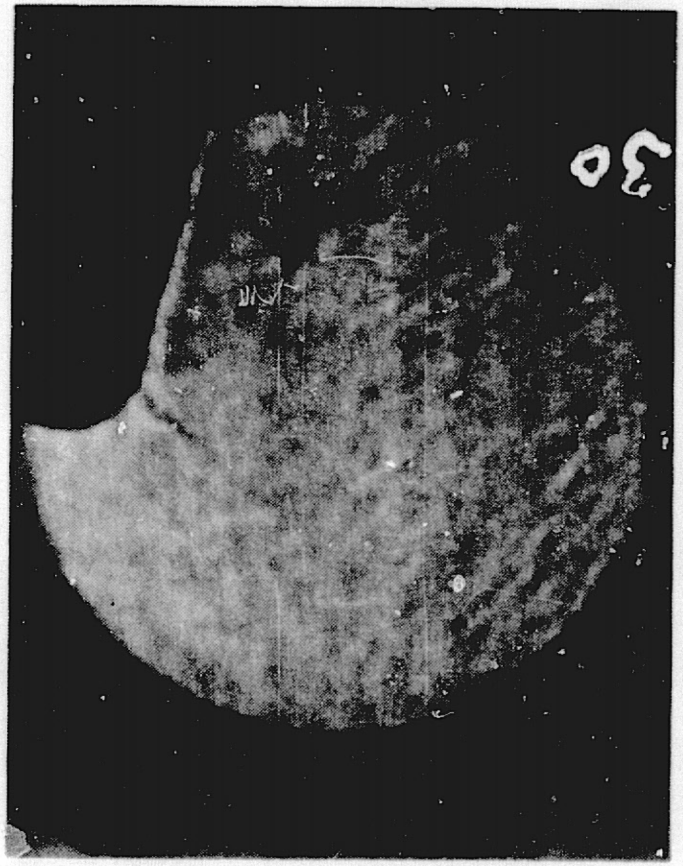
Test Point	Aerodynamic Flow Conditions							Summary of Shadowgraph Photo Tests			
	P_r^o	T_T^o (°R)	V_j^o (fps)	P_r^i	T_T^i (°R)	V_j^i (fps)	V_{ac} (fps)	Photo I.D.	Shadowgraph Photo Center Location x (in.)	Shadowgraph Photo Center Location y (in.)	Flow Field Covered by Shadowgraph Photos
511	3.13	1725	2419	2.92	852	1644	0	28 29 30 31	-5.53 0.84 2.82 -4.75	3.53 3.53 0 0	
512	3.13	1718	2412	2.91	857	1646	400	25 26 27	-5.39 0.91 2.47	3.58 3.58 0	
1511	3.23	877	1732	2.91	861	1651	0	17 18 19	-5.10 1.90 3.53	2.92 2.92 0.26	
1514	3.22	876	1729	2.91	837	1627	400	21 22 23	-5.17 1.12 3.32	2.66 2.66 0	

7.2 Shadowgraph Test Results

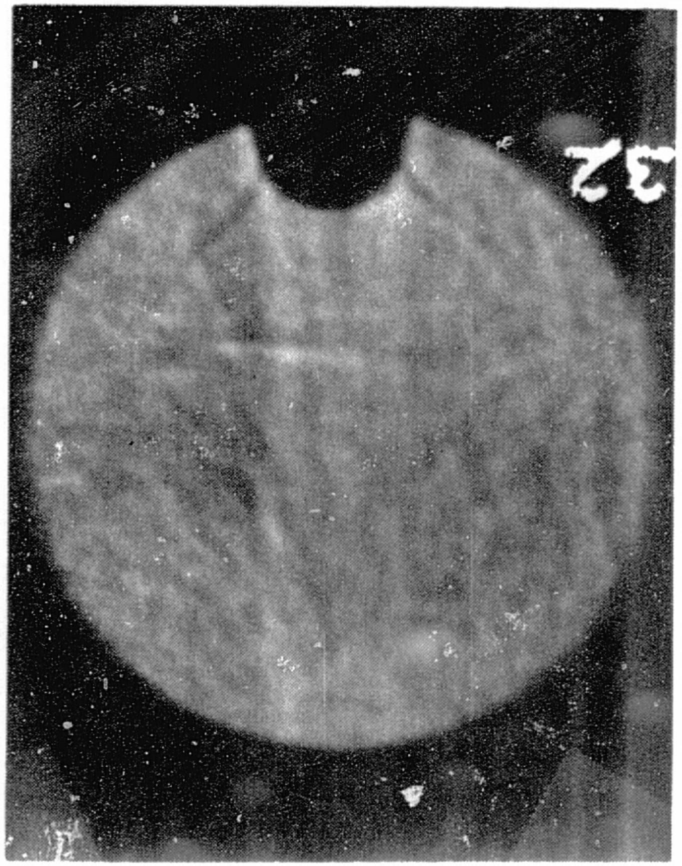
7.2.1 Shadowgraph Photos of DFSC-1

Configuration 1
Test Point 119
Shadowgraph No. 29

Configuration 1
Test Point 119
Shadowgraph No. 30



Configuration 1
Test Point 112
Shadowgraph No. 32



Configuration
Test Point
Shadowgraph No.

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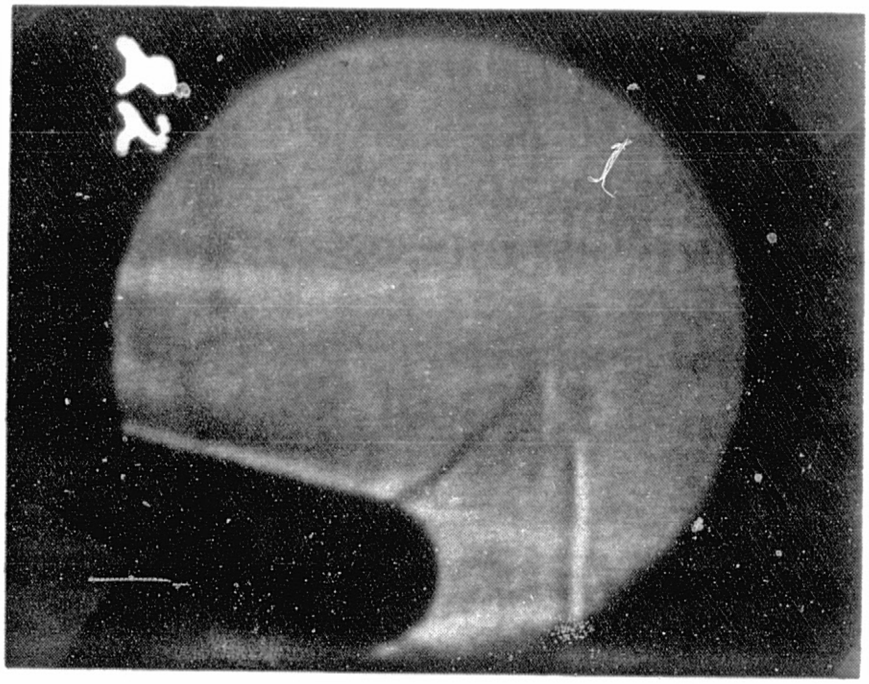
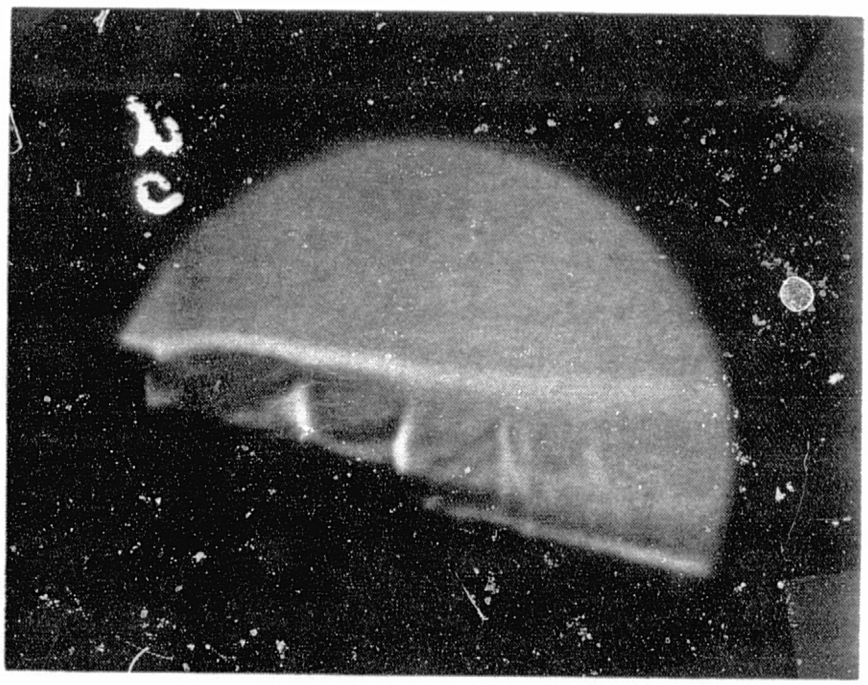
Configuration________
Test Point________
Shadowgraph No.________



Configuration________
Test Point________
Shadowgraph No.________



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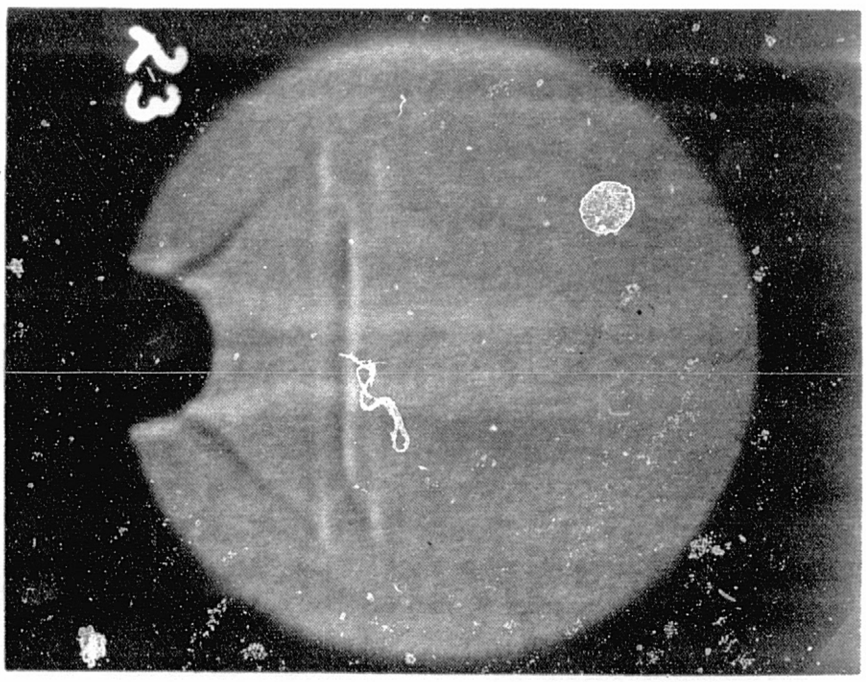
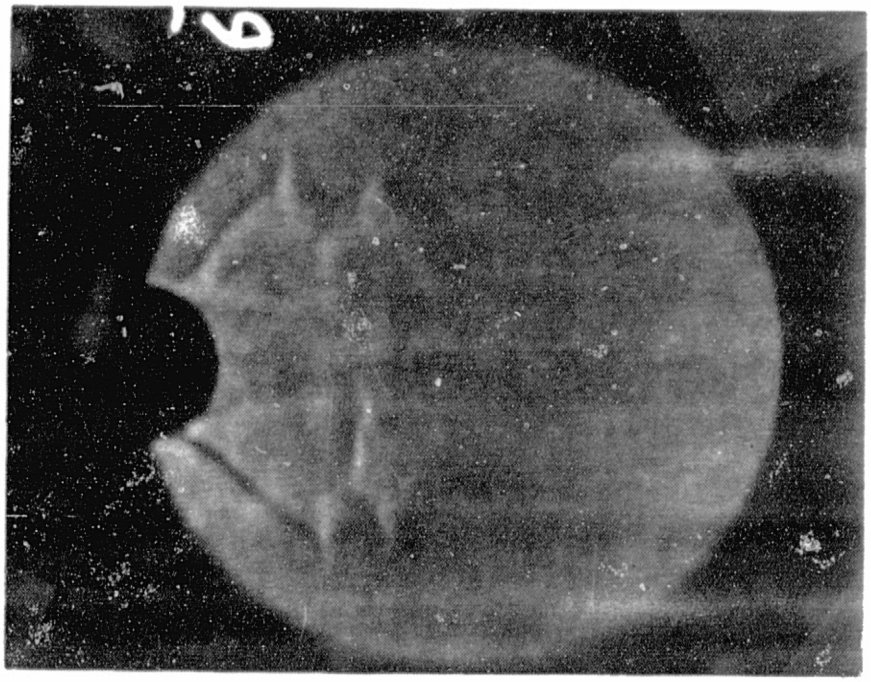
Configuration
Test Point
Shadowgraph No.

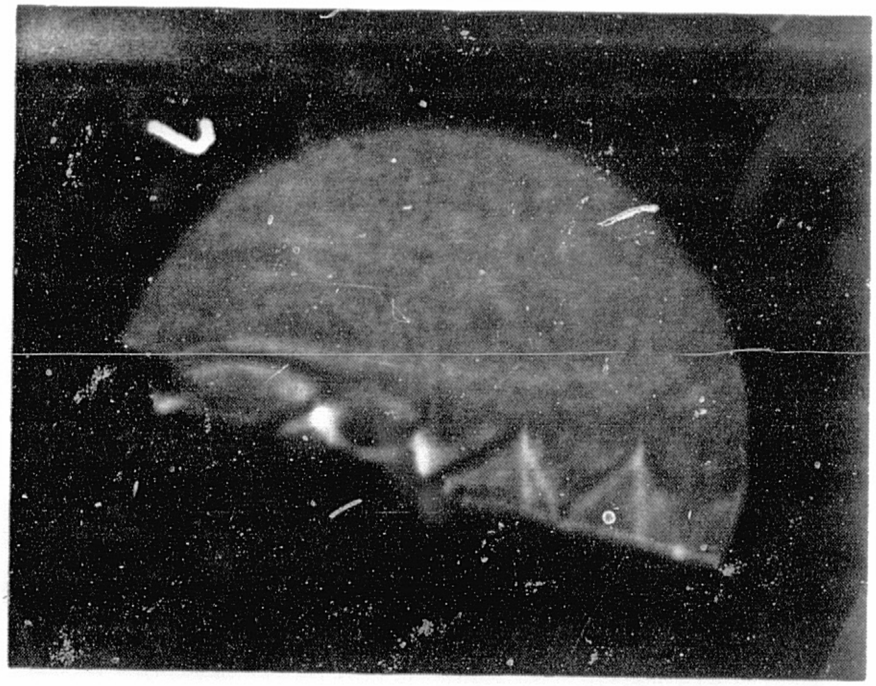
Configuration 1
Test Point 126
Shadowgraph No. 23



Configuration ________
Test Point ________
Shadowgraph No. ________



Configuration ________
Test Point ________
Shadowgraph No. ________



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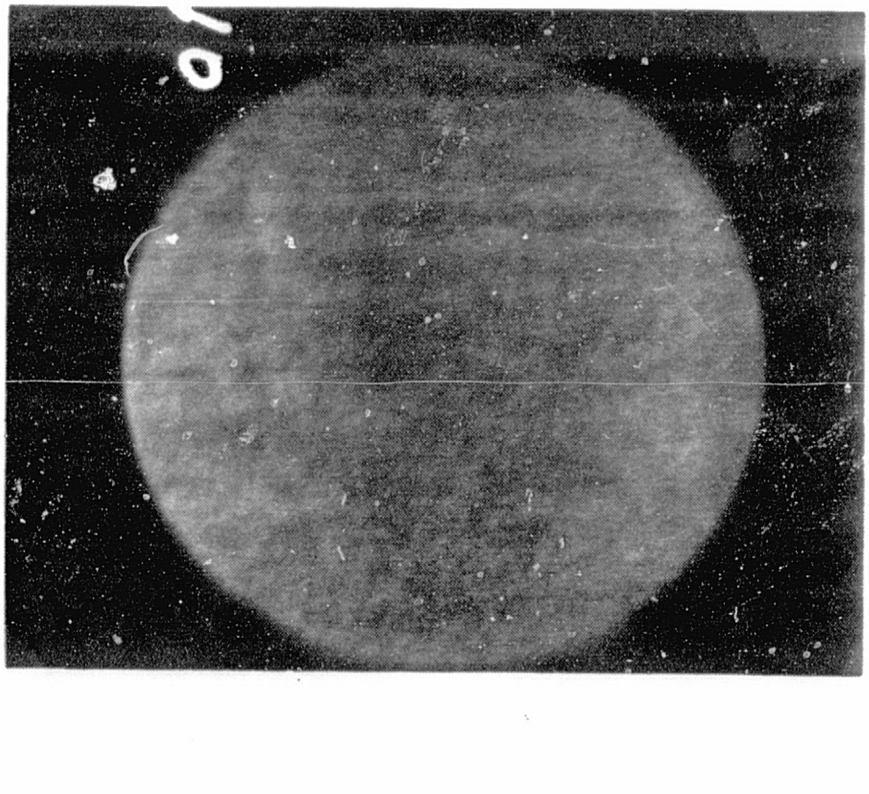
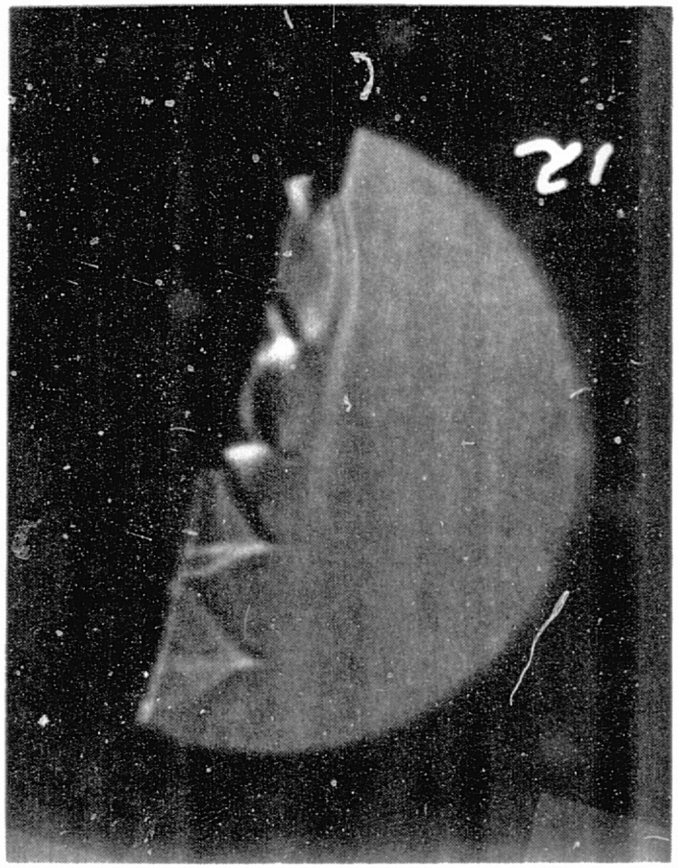
Configuration________
Test Point________
Shadowgraph No.________

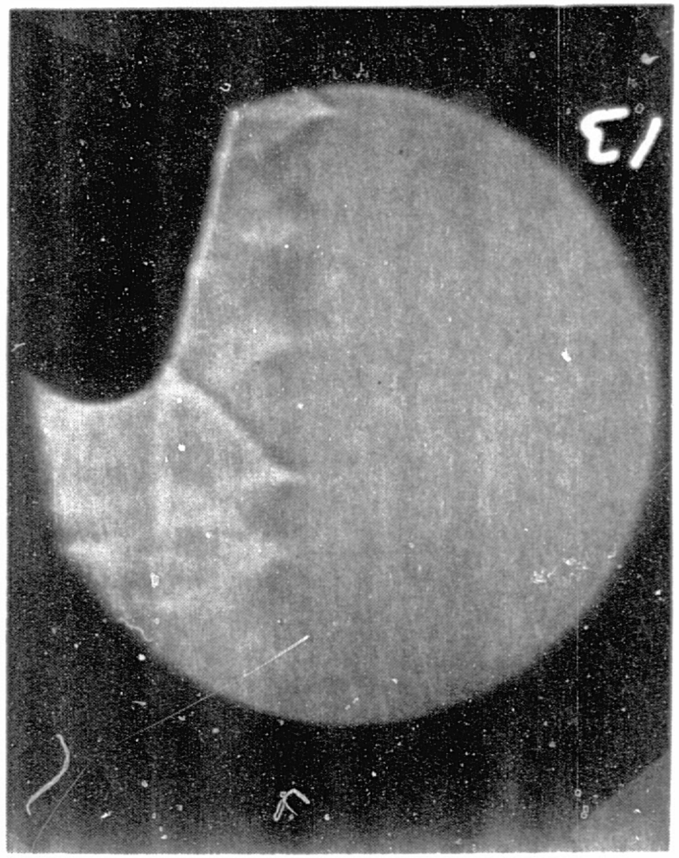
Configuration________
Test Point________
Shadowgraph No.________



Configuration 1
Test Point
Shadowgraph No. 12



Configuration 1
Test Point
Shadowgraph No. 13



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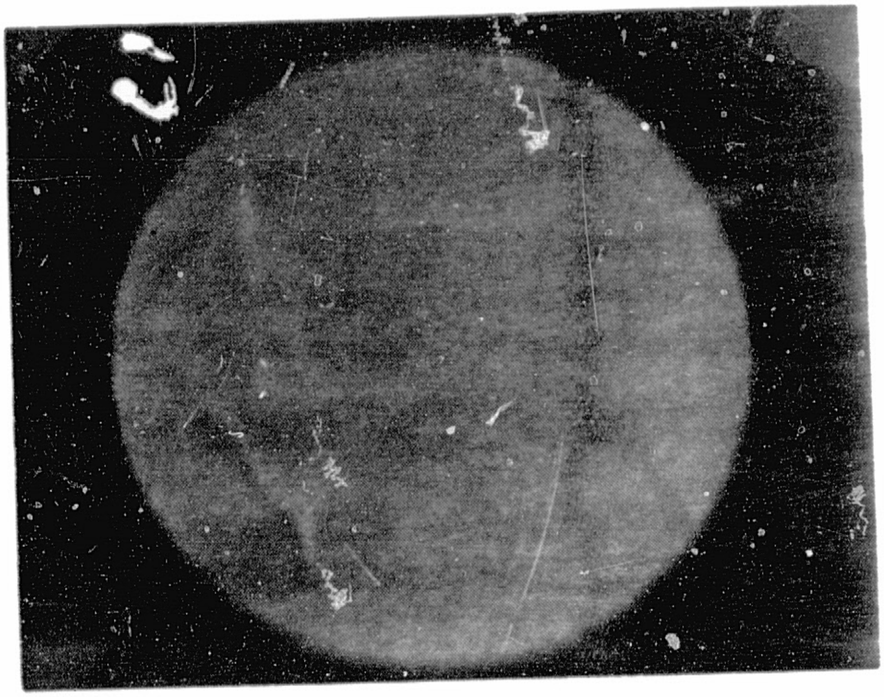
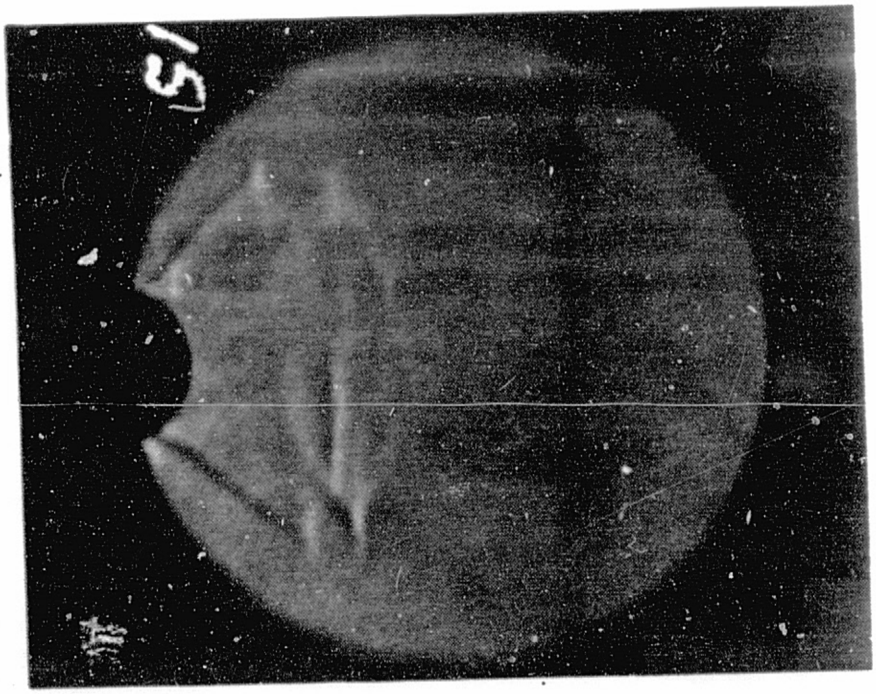
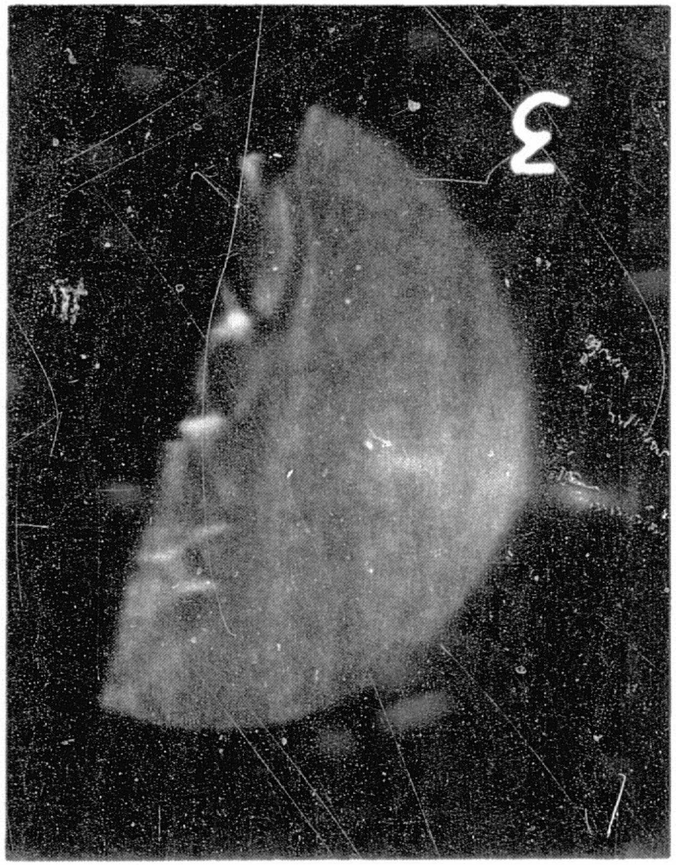
Configuration 1
Test Point 1120
Shadowgraph No. 17



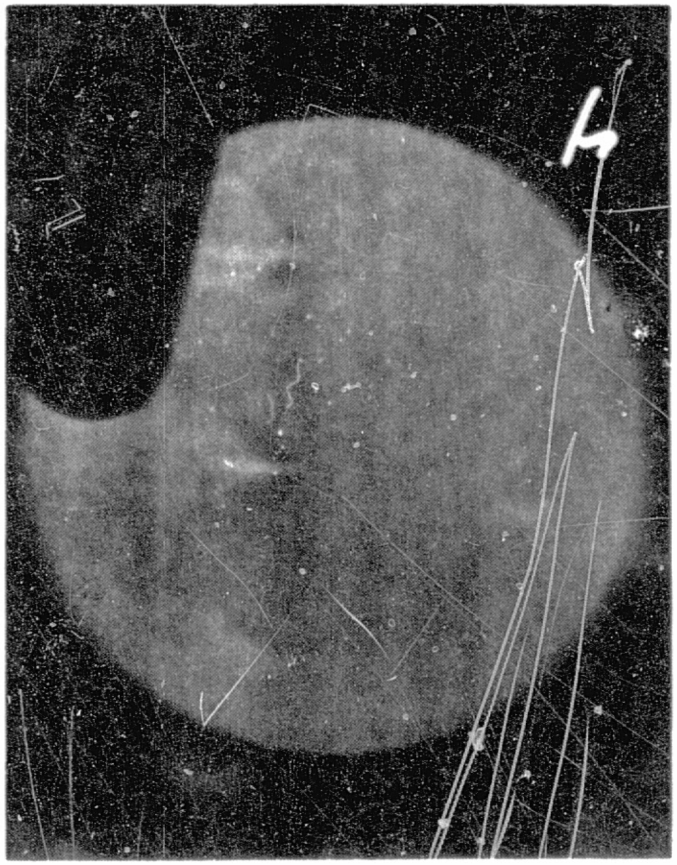
Configuration 1
Test Point 1120
Shadowgraph No. 15



Configuration 1
Test Point 5119
Shadowgraph No. 3



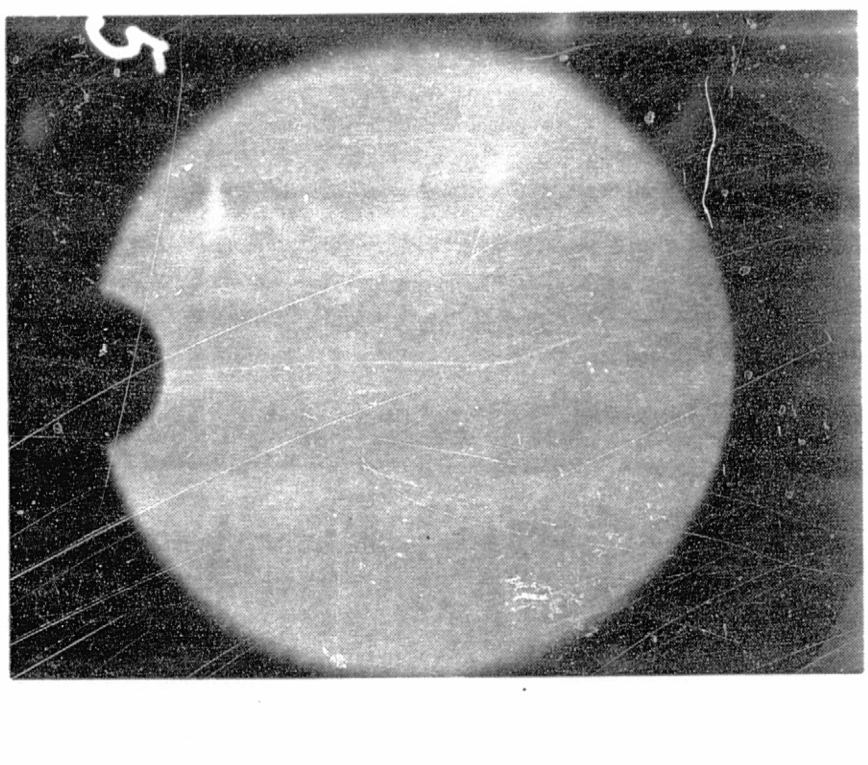
Configuration 1
Test Point 5119
Shadowgraph No. 4



C-6

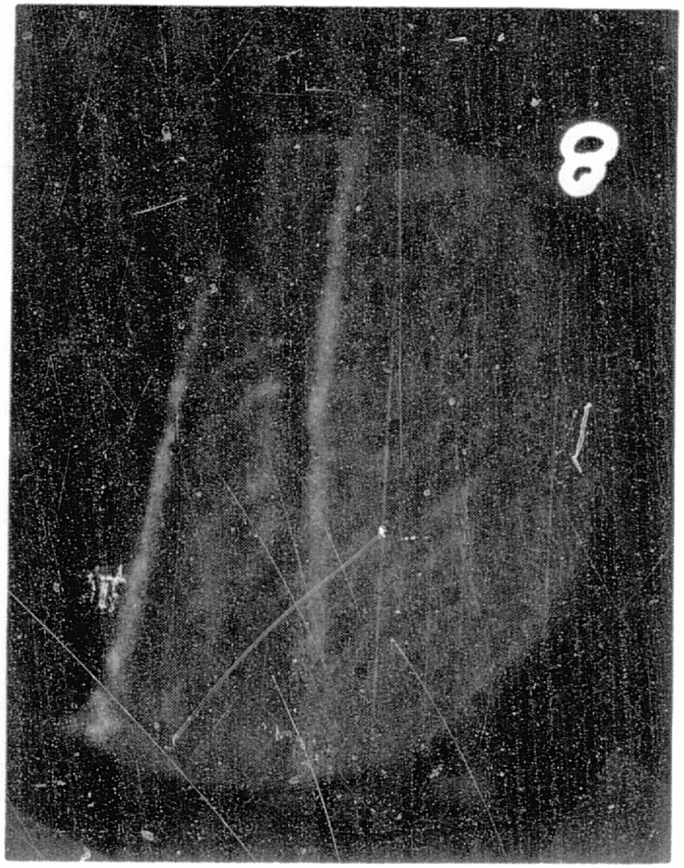
Configuration________
Test Point________
Shadowgraph No. ________

Configuration________
Test Point________
Shadowgraph No. ________



7.2.2 Shadowgraph Photos of DFSC-2

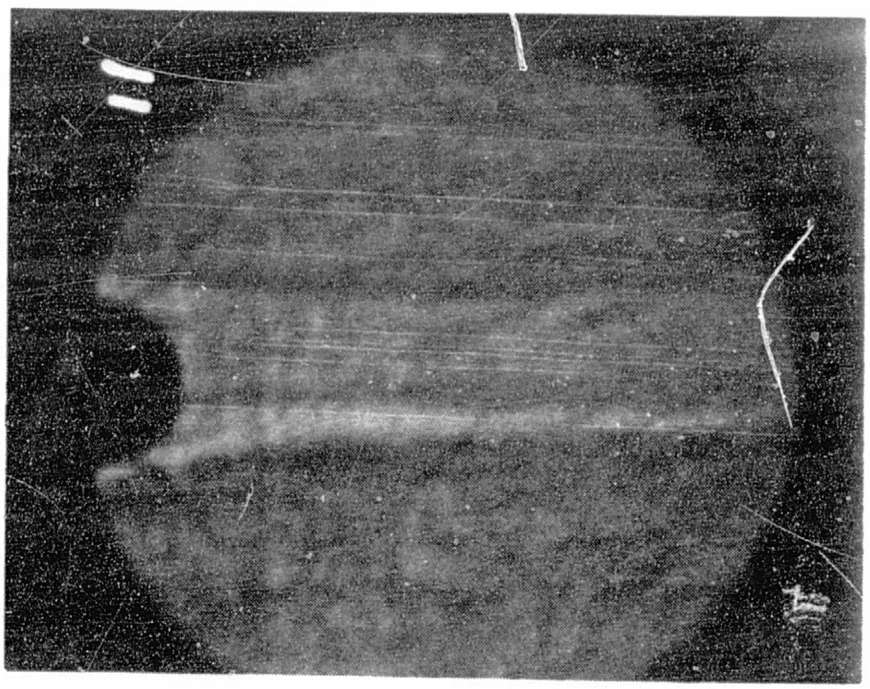
Configuration 2
Test Point
Shadowgraph No.



Configuration 2
Test Point
Shadowgraph No.

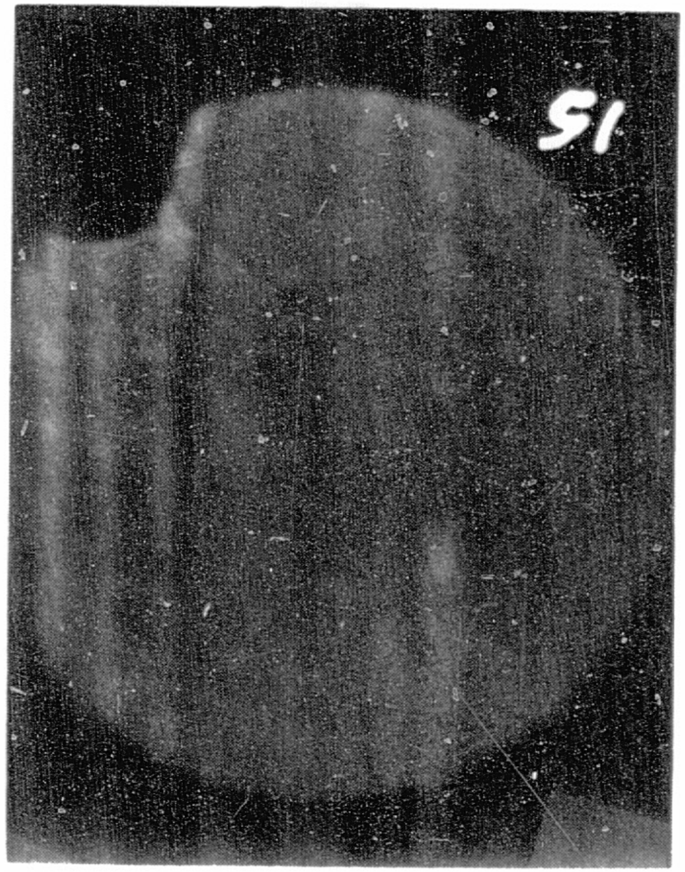
Configuration ______
Test Point ______
Shadowgraph No. ______

Configuration 2
Test Point 219
Shadowgraph No. 11



Configuration 2
Test Point 220
Shadowgraph No. 14

Configuration 2
Test Point 220
Shadowgraph No. 15



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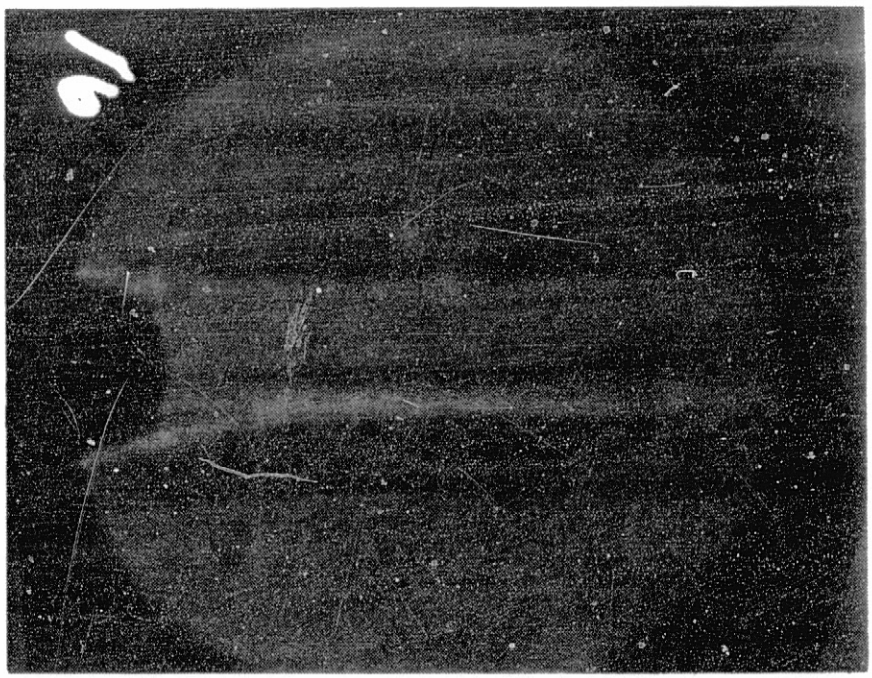
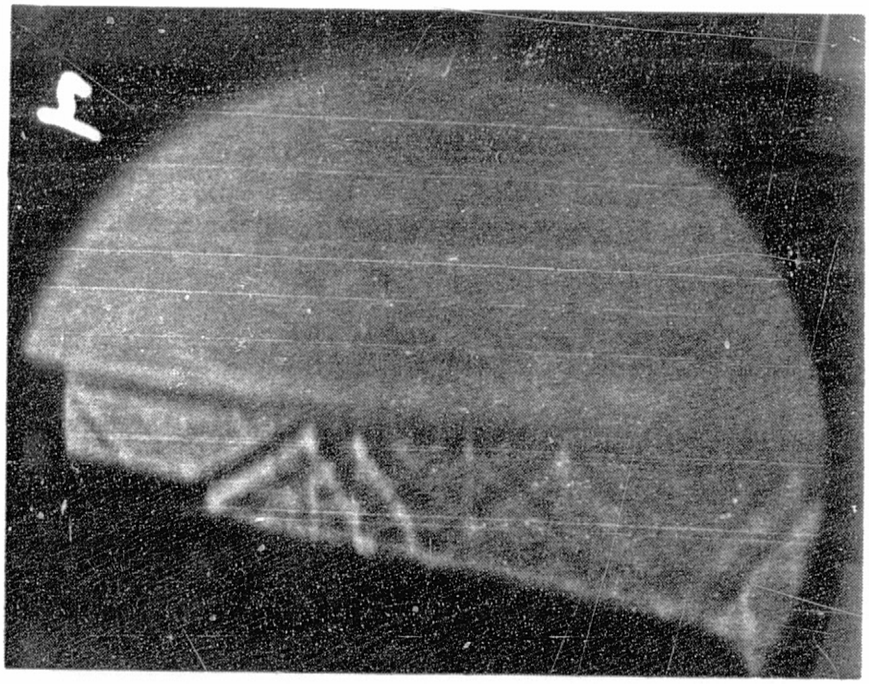
Configuration ____________
Test Point ____________
Shadowgraph No. ____________

Configuration ____________
Test Point ____________
Shadowgraph No. ____________

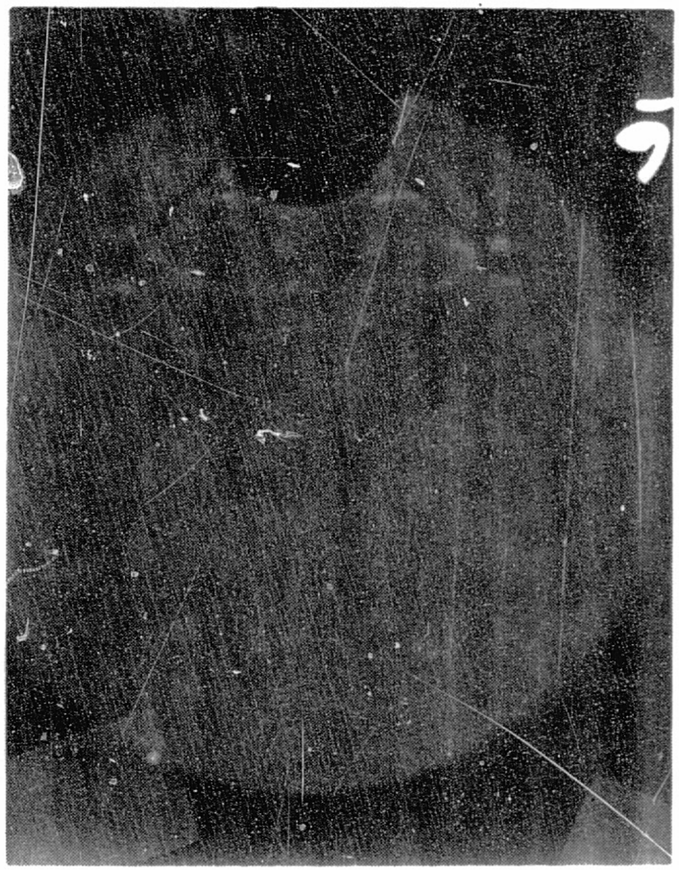


Configuration__________
Test Point__________
Shadowgraph No.__________

Configuration__________
Test Point__________
Shadowgraph No.__________



Configuration 2
Test Point 1217
Shadowgraph No. 6



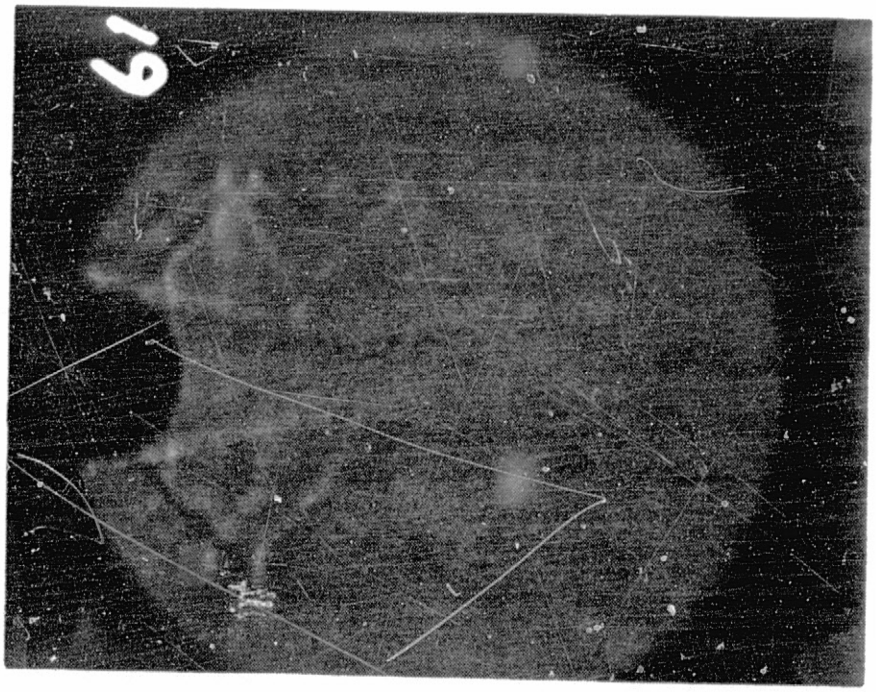
Configuration
Test Point
Shadowgraph No.

Configuration 2
Test Point [illegible]
Shadowgraph No. 17

Configuration 2
Test Point [illegible]
Shadowgraph No. 18

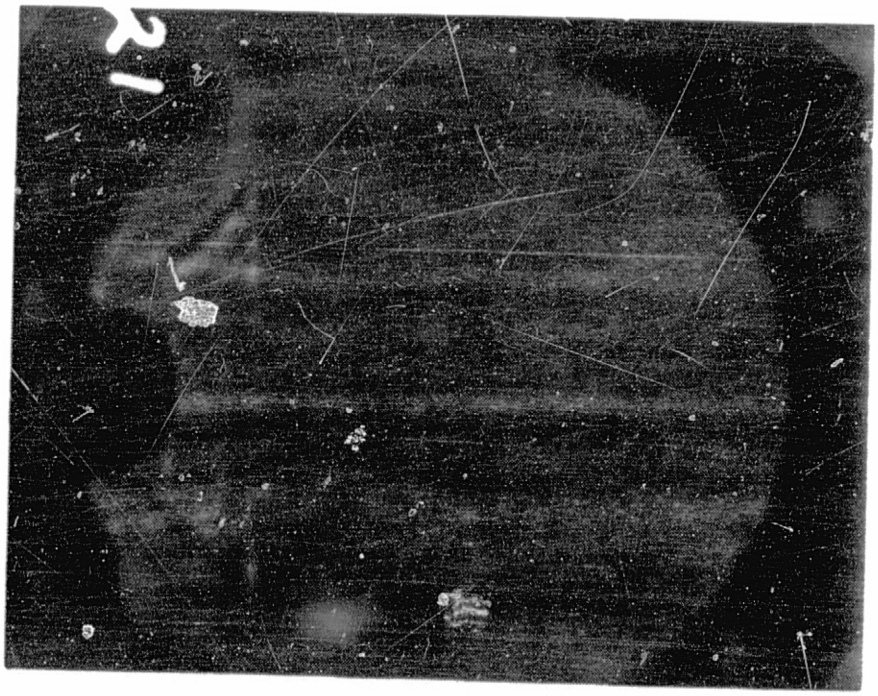
Configuration ____________
Test Point ____________
Shadowgraph No. ____________

Configuration ____________
Test Point ____________
Shadowgraph No. ____________



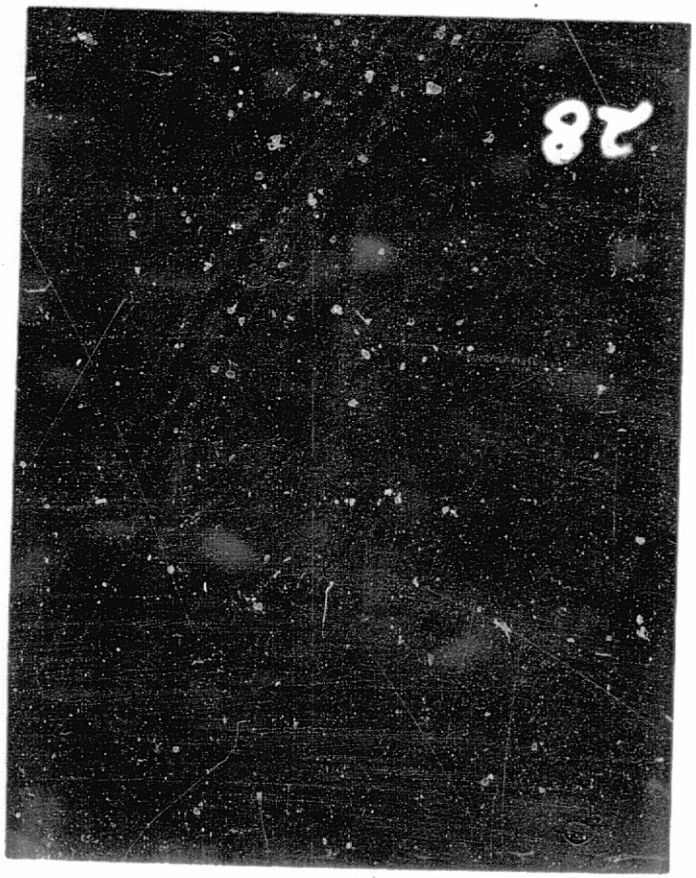
Configuration ____________
Test Point ____________
Shadowgraph No. ____________

Configuration ____________
Test Point ____________
Shadowgraph No. ____________

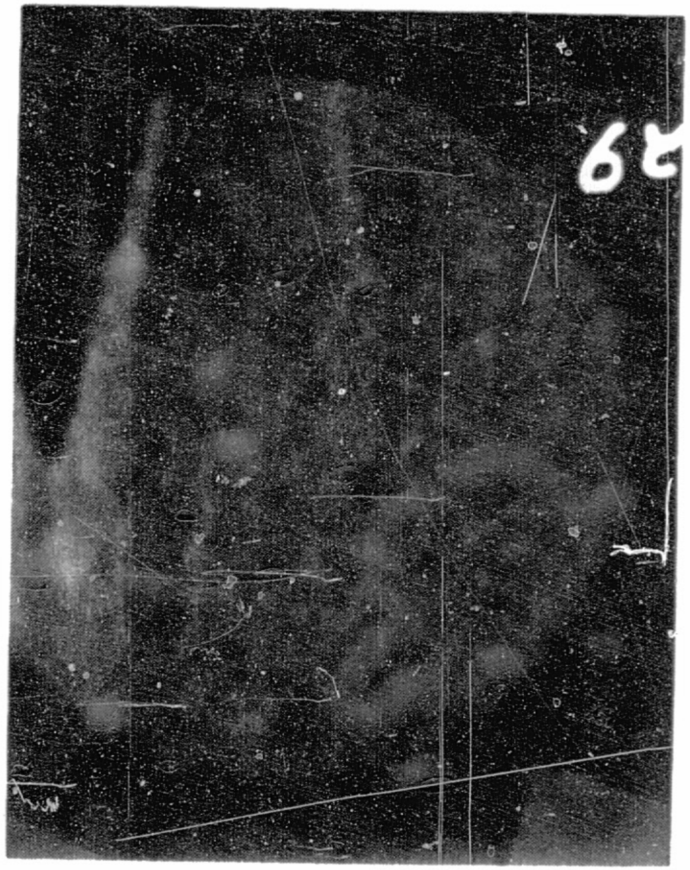


7.2.3 Shadowgraph Photos of DFSC-3

Configuration 3
Test Point 319
Shadowgraph No. 28

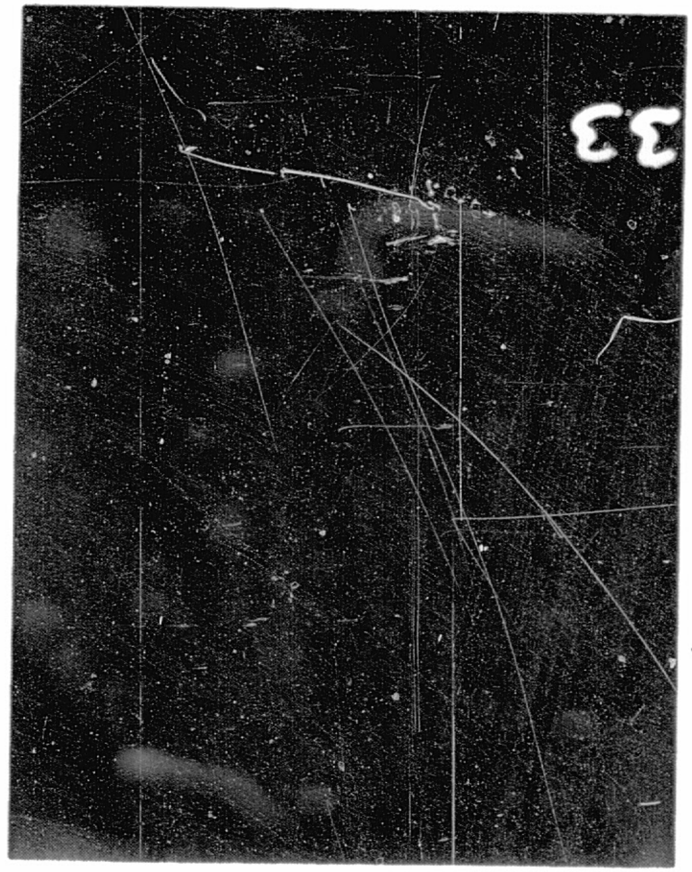


Configuration 3
Test Point 319
Shadowgraph No. 29



Configuration 3
Test Point 319
Shadowgraph No. 31

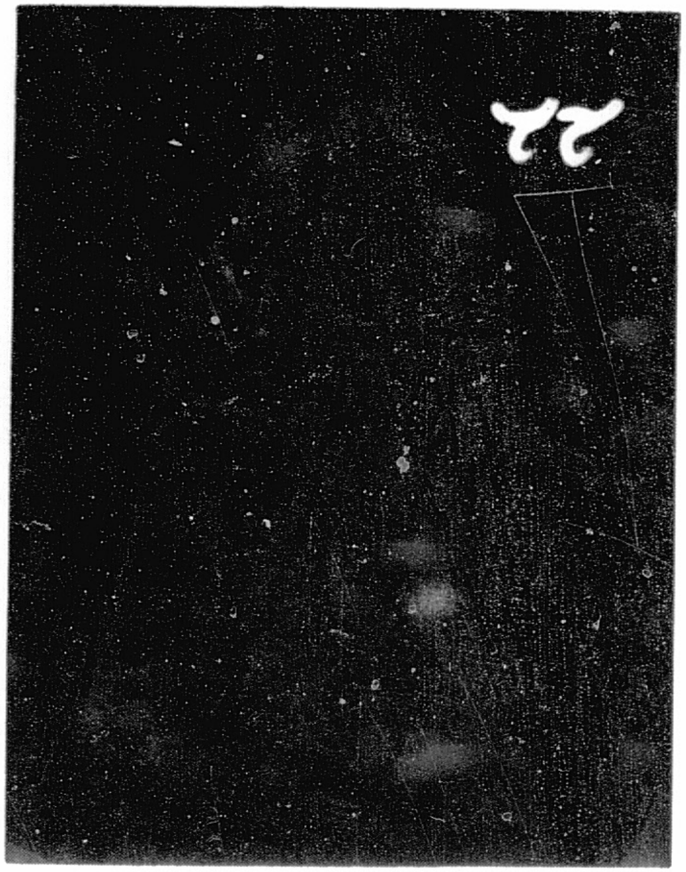
Configuration 3
Test Point 319
Shadowgraph No. 33



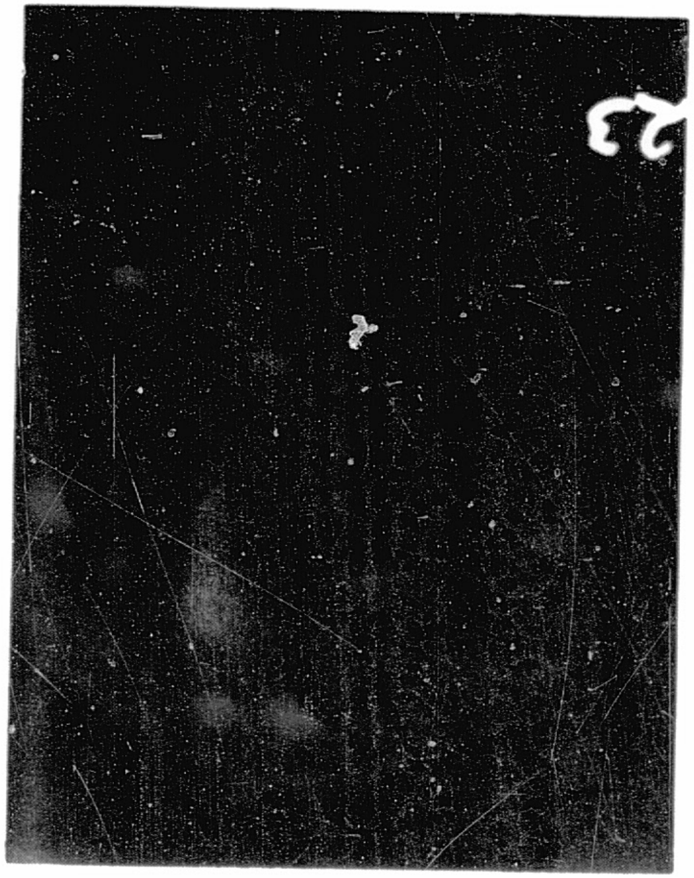
Configuration 3
Test Point 320
Shadowgraph No. 35

Configuration 3
Test Point 320
Shadowgraph No. 34

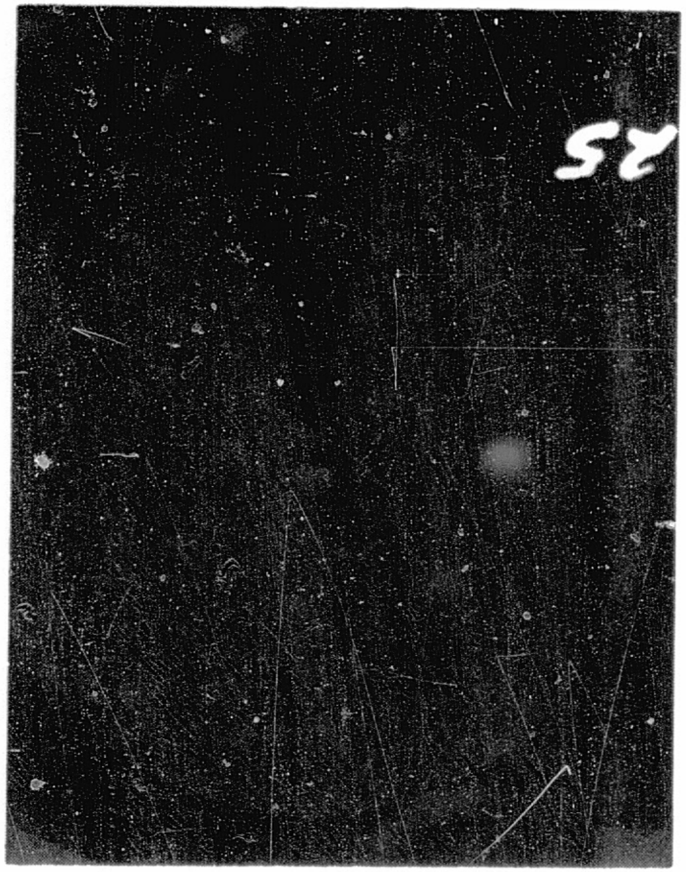
Configuration 3
Test Point 1319
Shadowgraph No. 22



Configuration 3
Test Point 1319
Shadowgraph No. 23



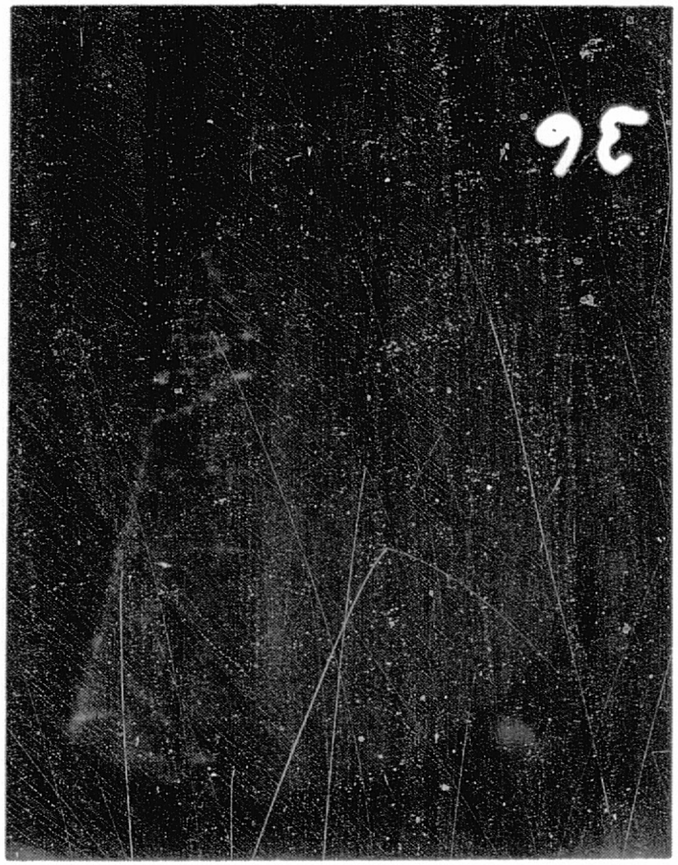
Configuration 3
Test Point 1319
Shadowgraph No. 25



Configuration
Test Point
Shadowgraph No.

1025

Configuration 3
Test Point 1320
Shadowgraph No. 36



Configuration
Test Point
Shadowgraph No.

7.2.4 Shadowgraph Tests of DFSC-4

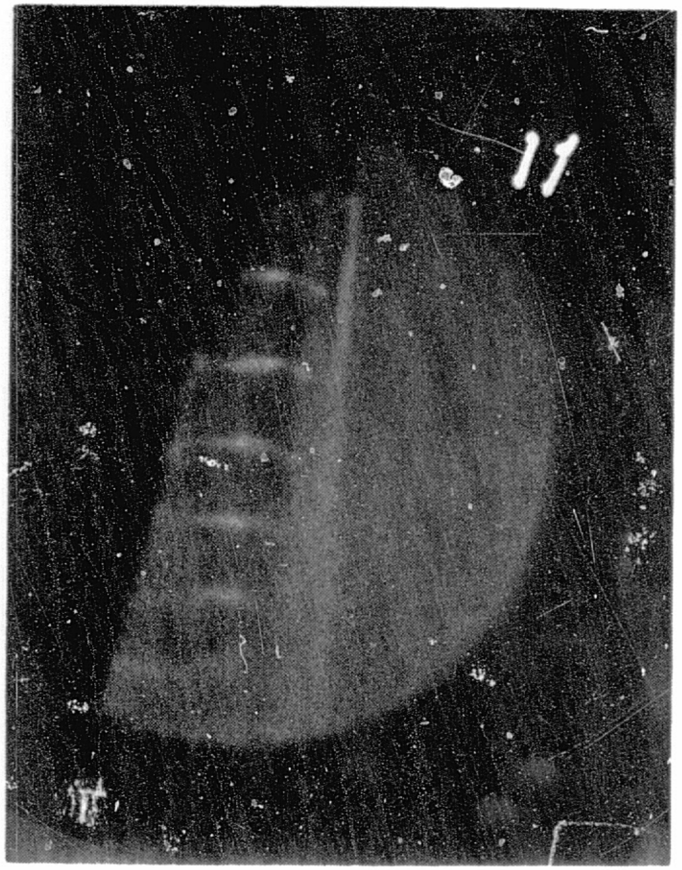
Configuration 4
Test Point 415
Shadowgraph No. 14

Configuration 4
Test Point 415
Shadowgraph No. 15

Configuration ____
Test Point ____
Shadowgraph No. ____

Configuation 4
Test Point 415
Shadowgraph No. 16

Configuration 4
Test Point 416
Shadowgraph No. 11

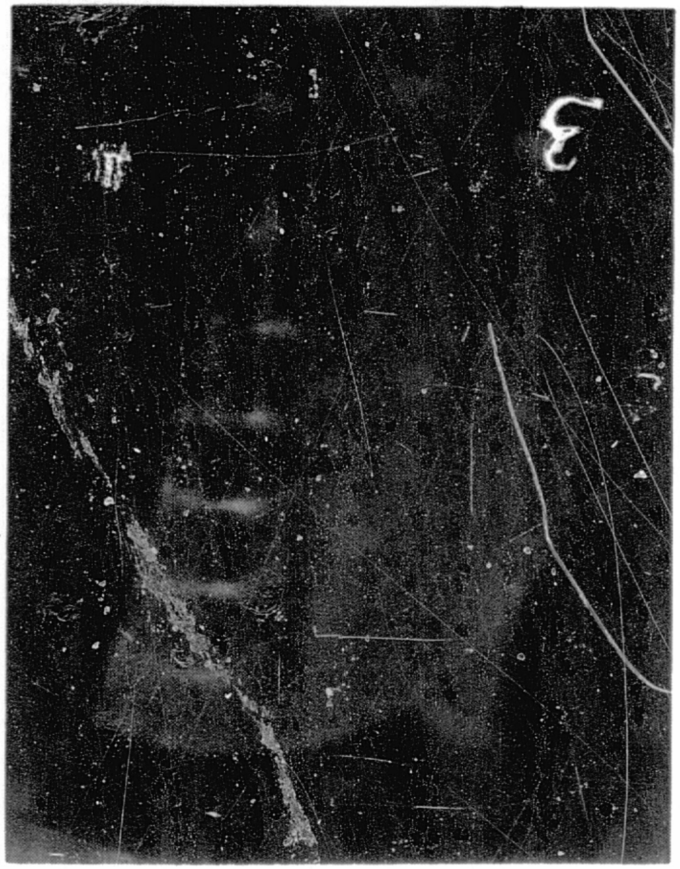


Configuration 4
Test Point 416
Shadowgraph No. 12

Configuration ________
Test Point ________
Shadowgraph No. ________

Configuration 7
Test Point 416
Shadowgraph No. 13

Configuration 4
Test Point 1415
Shadowgraph No. 3

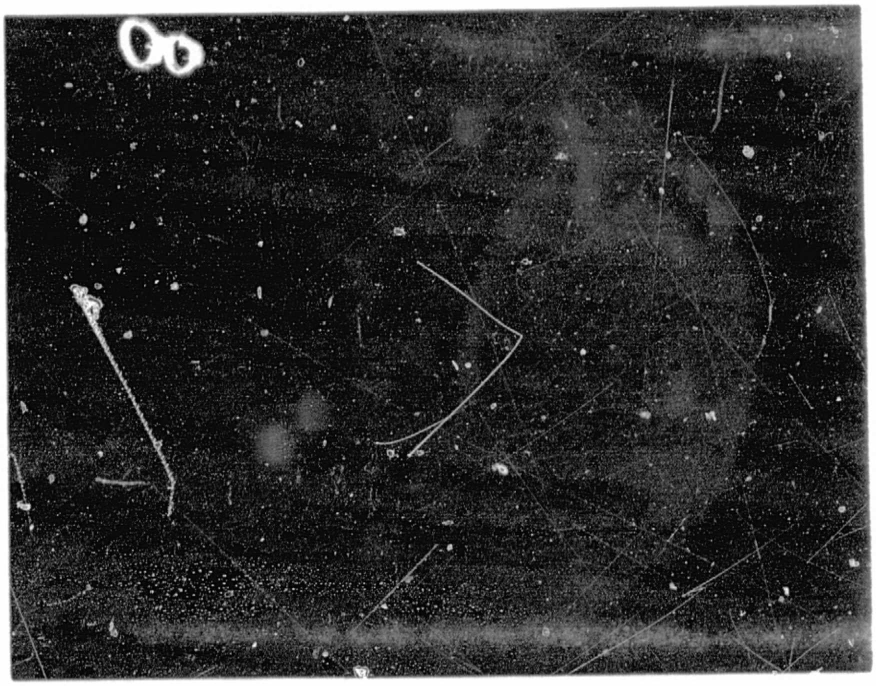


Configuration 4
Test Point 1415
Shadowgraph No. 4

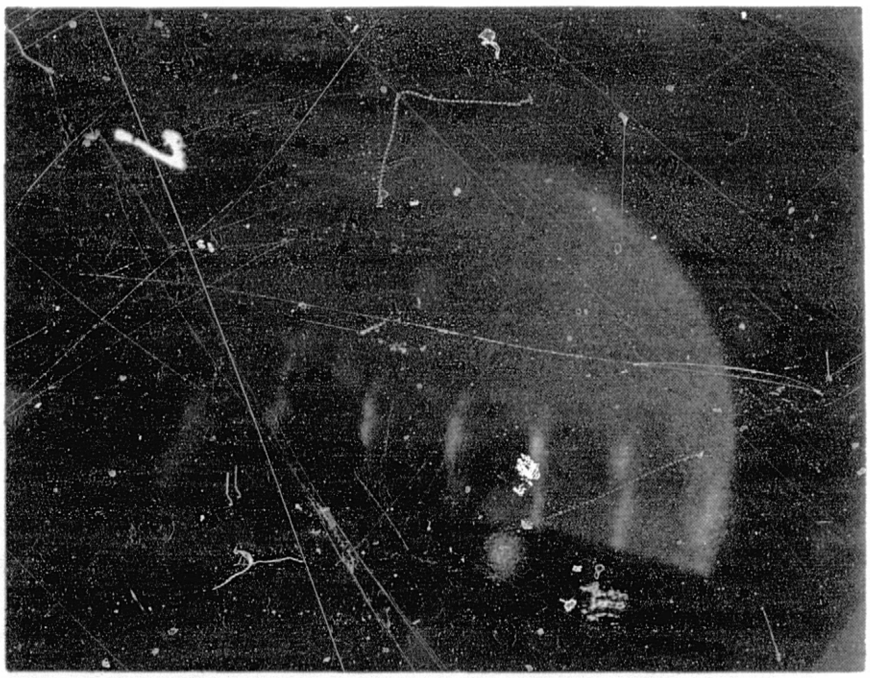
Configuration ________
Test Point ________
Shadowgraph No. ________

Configuration 4
Test Point 1415
Shadowgraph No. 5

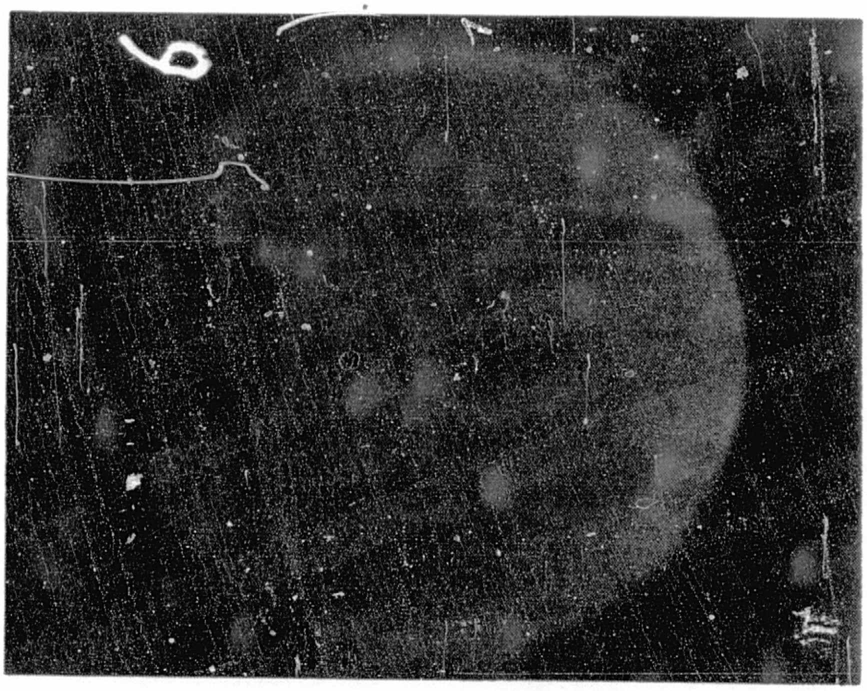
Configuration 4
Test Point 1416
Shadowgraph No. 8



Configuration 4
Test Point 1416
Shadowgraph No. 7



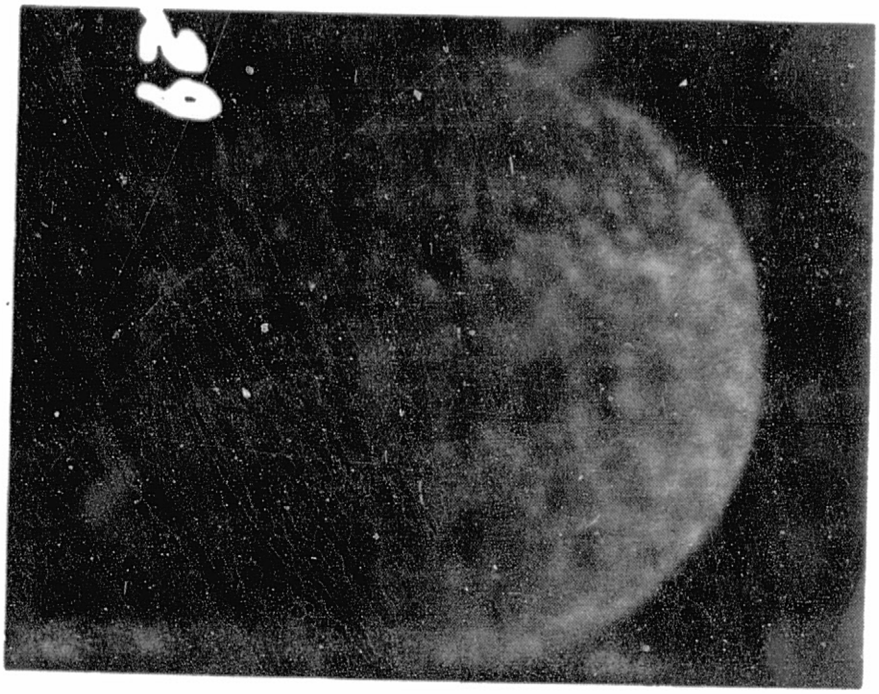
Configuration ______
Test Point ______
Shadowgraph No. ______



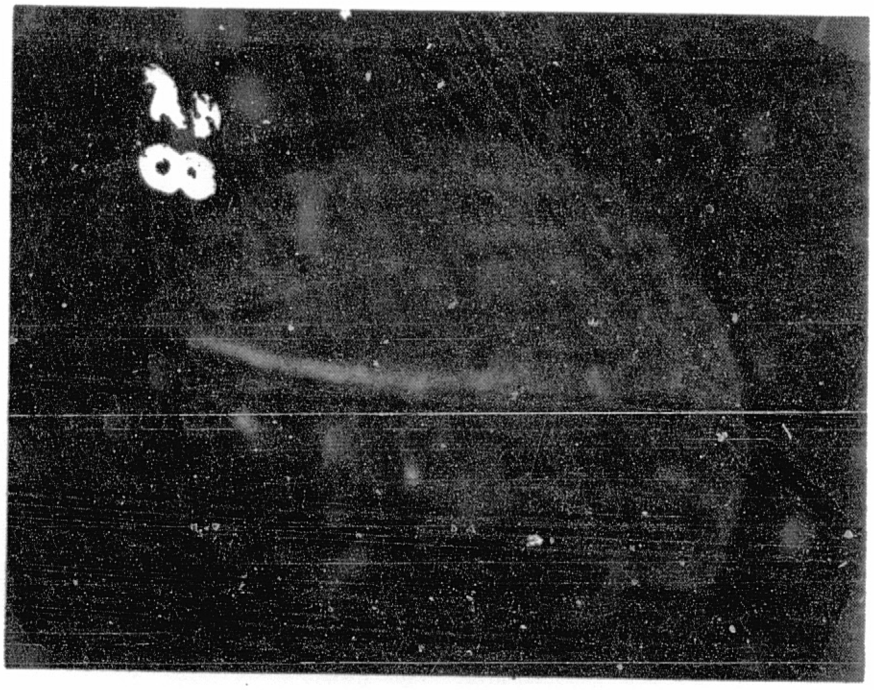
Configuration 4
Test Point 1716
Shadowgraph No. 9

7.2.5 Shadowgraph Tests of DFSC-5

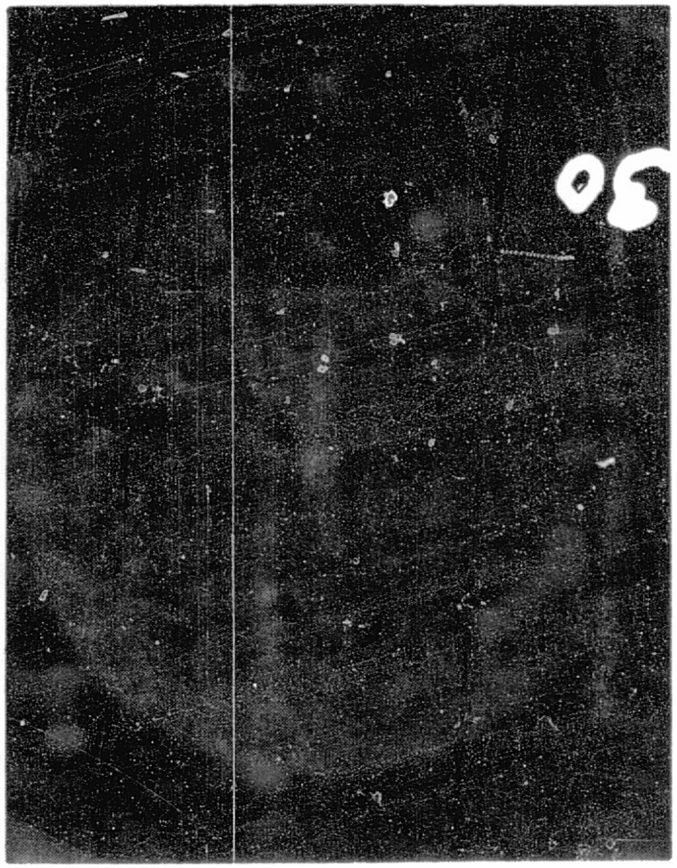
Configuration 5
Test Point 511
Shadowgraph No. 29



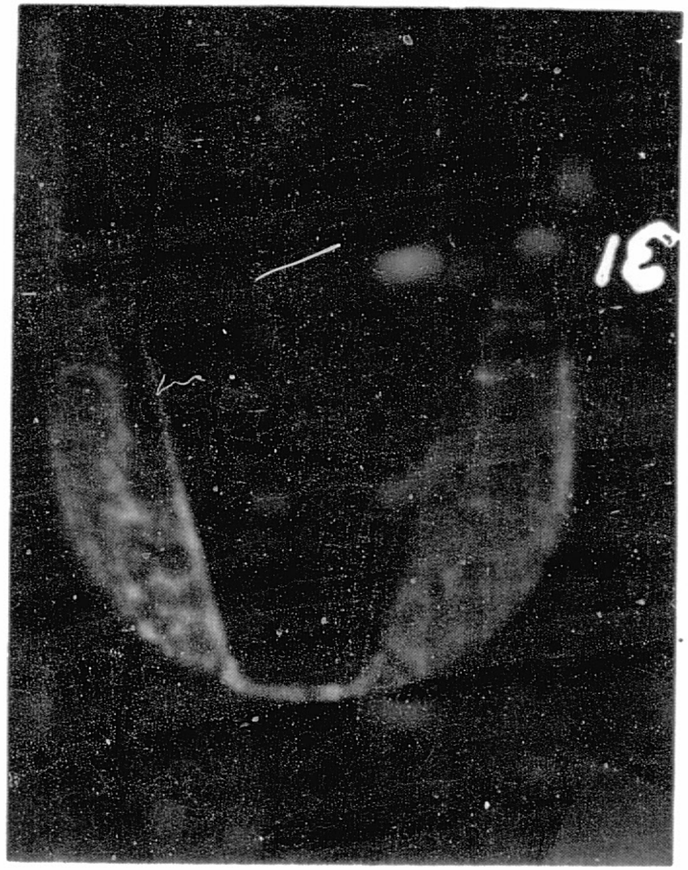
Configuration 5
Test Point 511
Shadowgraph No. 28



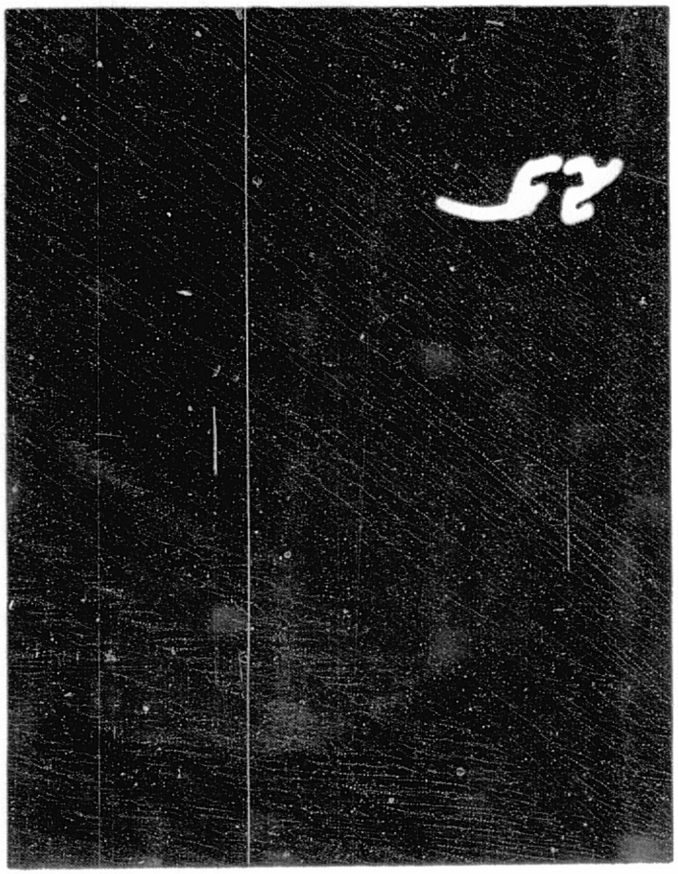
Configuration 5
Test Point 511
Shadowgraph No. 30



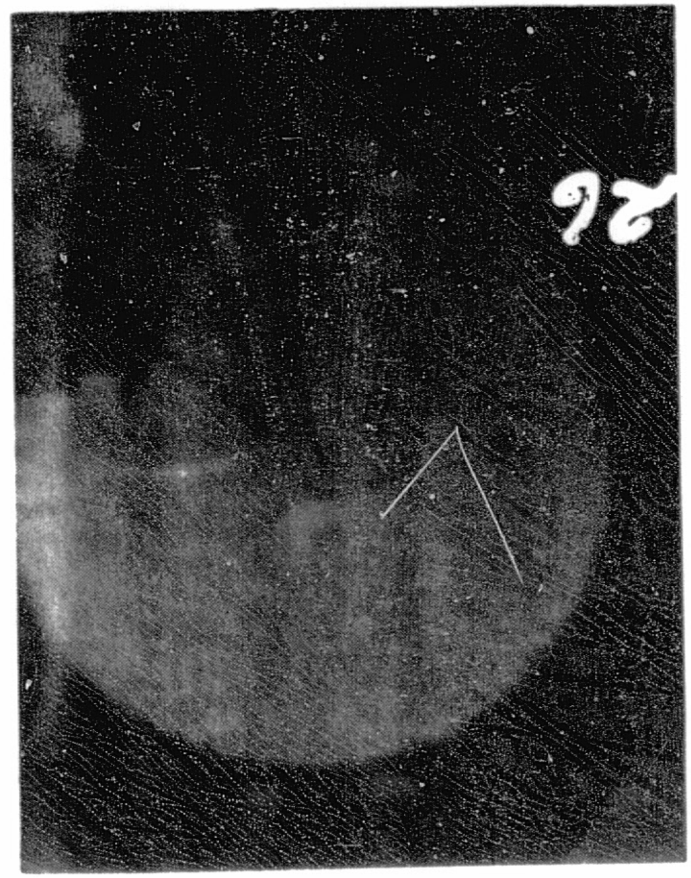
Configuration 5
Test Point 511
Shadowgraph No. 31



Configuration 5
Test Point 512
Shadowgraph No. 25



Configuration 5
Test Point 512
Shadowgraph No. 26



Configuration 5
Test Point 512
Shadowgraph No. 27

Configuration
Test Point
Shadowgraph No.

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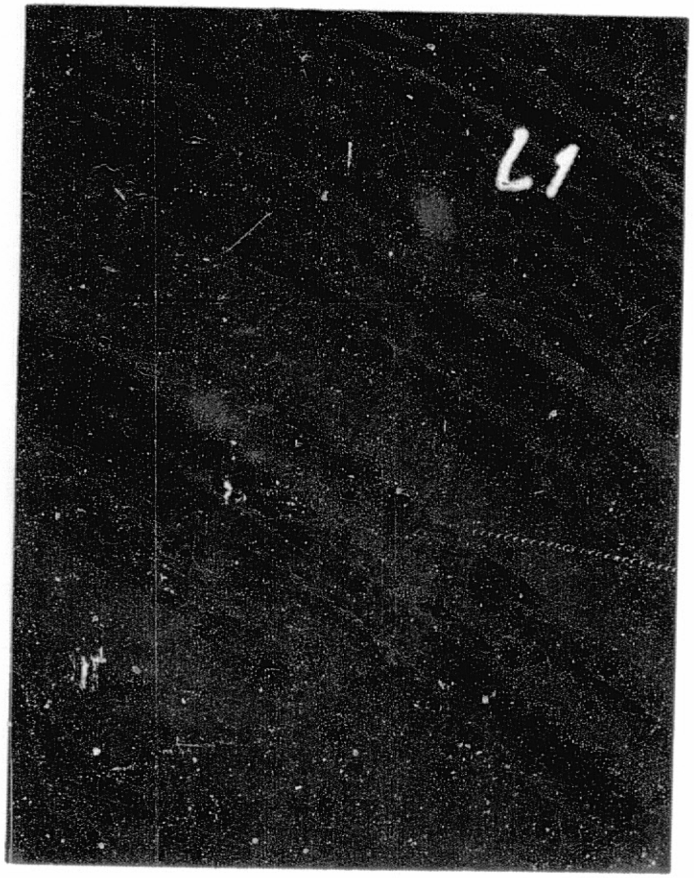
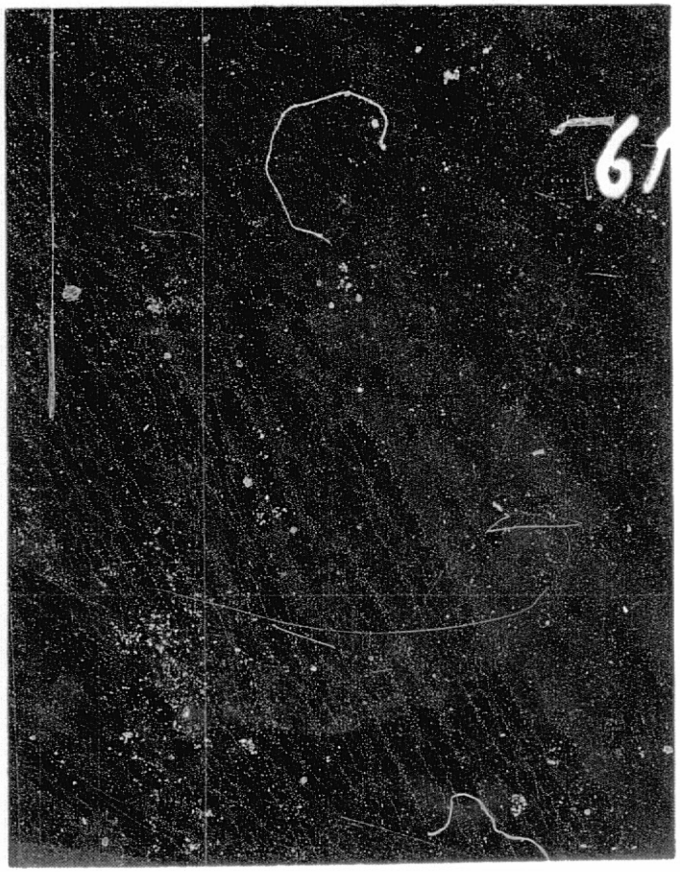
Configuration 5
Test Point 1511
Shadowgraph No. 17



Configuration 5
Test Point 1511
Shadowgraph No. 18

Configuration 5
Test Point 1511
Shadowgraph No. 19



Configuration
Test Point
Shadowgraph No.

Configuration 5
Test Point 1514
Shadowgraph No. 21

Configuration 5
Test Point 1514
Shadowgraph No. 22

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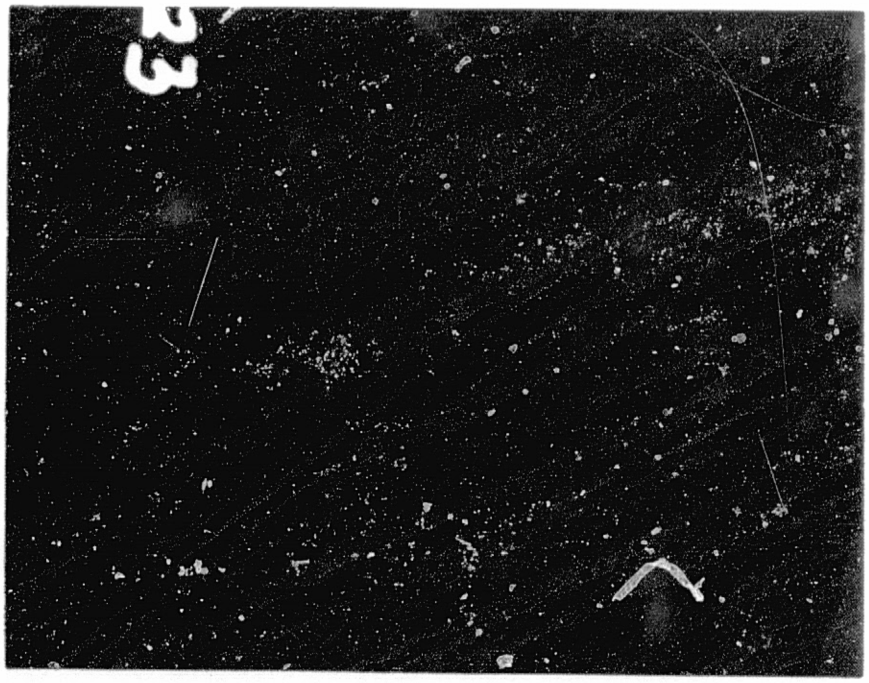
Configuration ________
Test Point ________
Shadowgraph No. ________

Configuration 5
Test Point 1514
Shadowgraph No. 23



8.0 NOMENCLATURE

A	Cross-Sectional Area
a	Speed of Sound
C-D	Convergent-Divergent
CDR	Comprehensive Data Report
D	Diameter
F	Thrust
F_{ref}	Reference Thrust, 5130 pounds
h	Annular Step Height
L	Shock-Cell Spacing
LBM	Mixed Shock Strength Parameter, 10 log β^{eff}, Refer Table 3-1 for Definition
LV	Laser Velocimeter
LVM	Mixed Velocity Parameter, 10 log V_j^{mix}/a_{amb}, Refer Table 3-1 for Definition
M	Mach Number
NF	Normalizing Factor, Defined in Table 3-1
OASPL	Overall Sound Pressure Level
OAPWL	Overall Sound Power Level
P	Pressure
P_r	Defined = P/P_{amb}
P_r^{eff}	Defined in Table 3-1
PNL	Perceived Noise Level
PNLN	Normalized PNL, Defined as PNL - 10 log $(F/F_{ref})\ (\rho/\rho_{amb})^{\omega-1}$
PNLT	Tone Corrected Perceived Noise Level
RH	Relative Humidity
R	Radius
R'	Slant-Traverse Radial Coordinate
SPL	Sound Pressure Level
T	Temperature
V	Ideally Expanded Velocity
W	Mass Flow Rate
X	Axial Distance
X'	Axial Distance Measured Along Plug Surface

Z, Z'	Radial Distance in N-S Direction
β^{eff}	Effective Shock Strength Parameter
γ	Specific Heat Ratio
θ_i	Angle Measured Relative to the Inlet Centerline
θ_1, θ_2	Divergent Flap Angle/Plug Angle
ρ	Density
ω	Density Exponent

SUBSCRIPTS

ac, a/c	Aircraft
amb	Ambient Conditions
eq	Equivalent
j	Based on Ideal Jet Conditions
r	Ratio
s	Static
T	Stagnation Condition

SUPERSCRIPTS

i	Inner
o	Outer
mix	Fully Mixed Conditions

9.0 REFERENCES

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2-2 Janardan, B.A., et al, "Free Jet Investigation of Mechanically Suppressed High-Radius-Ratio Coannular Plug Model Nozzles", Comprehensive Data Report, Volume I, Test Nozzles and Acoustic Data, R81AEG484, May, 1981.

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2-4 Bediako, E.D., Yamamoto, K., "Aerodynamic Design and Analysis for Shock Cell Noise Reduction System", General Electric Company, R81AEG543, September, 1981.

2-5 General Electric Company, Proposal for "Experimental Investigation of Shock-Cell Noise Reduction for Dual-Stream Nozzles in Simulated Flight", P81-35 in Response to NASA RFP3-378160, April, 1981.

4-1 Yamamoto, K., et al, "Experimental Investigation of Shock-Cell Noise Reduction for Single Stream Nozzles in Simulated Flight", Comprehensive Data Report, Vol. I, II and III, NASA CR-168234, July 1982.

4-2 Shields, F.D. and Bass, H.E., " Atmospheric Absorption of High Frequency Noise and Application to Fractional-Octave Bands", University of Mississippi, NASA CR-2760, June 1977.